CLINICAL MEDICINE

GEORGE B. LAKE, M.D.
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Editorial

Osler in War Time

THE outlines of the life of Sir William Osler, "Greatest Physician of Modern Times," are well known to most medical men, and were briefly sketched in this Journal in November, 1936 (page 525), but in these trying times it may be interesting to have a glimpse of Sir William as he was seen by his co-workers during World War I.

Such a glimpse is made possible for our readers through the courtesy of Dr. Edgar L. Gilcreest, of the University of California Medical School, San Francisco, Calif., who worked with Osler in the American Women's War Hospital at Paignton, South Devonshire, England, in 1915, kept notes of the occurrences of this association, and has given us permission to abstract the published records of such notes* and to use the photograph reproduced in the frontispiece.

Osler was always cordial and friendly with everyone with whom he came in contact, his conversation was sparkling and brilliant, and his interest in every patient he saw was insatiable. When he went through a ward, everybody there felt better. On his visits to the hospital in Devonshire he lunched with the staff, and many of Dr. Gilcreest's notes were made on such occasions.

One day something was mentioned about the English not eating hot bread, and Osler replied: "That is why most doctors in England are poor. I used to make my living, in Baltimore, from the people who ate hot bread, just as the doctors in Boston make their living from people who eat pie."

He once told an anecdote about being a member of a committee to investigate some matter in eastern Maryland. When they reached the town and he was introduced to the fine, old-school physician who was in charge, this man looked at him in some puzzlement (Osler carried his years remarkably well) and asked if he were the author of that "great book on medicine."

"Oh no," said Osler. "That was my father."

"I thought so," replied the country medicus. "Give my regards to the old gentleman and tell him he is especially good on pneumonia and malaria."

*J.A.M.A., June 12, 1920, p. 1662, and "Osler Memorial," Internat'l Assn. of Med. Museums.

"I shall surely do that," responded Osler, "and I know my father will be much gratified."

One can readily understand the circumstances in which he tossed off the jocular quip about euthanasia for those past 60 years, which was taken so seriously by the humorless ones.

One of the nurses in a ward asked permission to take his photograph, and Osler, grasping the arms of two of the younger physicians, said, "Yes, but I must have the boys with me."

The nurse, however, watched for an opportunity and snapped him by himself. When he heard the click of the camera, Osler looked up and said, with a smile, "Oh you thief!"

When his ward rounds were finished, Osler used to go over to the physicians' building, where lunch was served and the library was located, and surround himself with half the books on the shelves, looking up points in connection with the cases he had just seen.

On one such occasion Dr. Gilcreest had just shown Sir William a patient with a popliteal arteriovenous aneurysm, in whom a pistol-shot sound could be heard in both femoral arteries. Osler examined the patient carefully, and when they went to luncheon Dr. Gilcreest handed him a volume of Keen's "System of Surgery." While he was engrossed in reading the article on aneurysms by Matas, the photograph of him, reproduced in the frontispiece, was snapped. It shows clearly the contour of his magnificent head, and his complete absorption in the business in hand.

We hope and believe that these intimate comments will be as interesting to our readers as they are to us, and will help to keep green the memory of that great Soul who said the only epitaph he craved would be, "He taught medicine at the bedside."

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The A.M.A. Cancels Meeting

THE American Medical Association has cancelled its 1943 meeting, which was scheduled to be held in San Francisco next June. This is the third cancellation in the history of the Association, the former two (which, at the time, were listed as "postponements") having been in 1861 and 1862, during the Civil War.

This is *not*, as some physicians apparently think, a suspension of meetings "for the duration," but has to do only with the one meeting for 1943.

This action seems to have engendered an undue degree of pessimism in the minds of some, so that talk has been heard of cancelling *all* medical meetings while the war lasts. Such action would be a national calamity, as it would loosen the ties of professional cooperation to an extent that would take years to repair, and would deprive physicians of the benefits of graduate instruction and conferences on professional problems at a time when many of them will need these most urgently.

In these days, when many physicians are necessarily resuming duties that they had laid aside, it is especially necessary that they should have as many opportunities as possible to refresh their knowledge and bring it up to date, so the smaller and more or less local organizations should be more than usually active and should plan their programs to meet the immediate need.

Officials of county, district, state, and regional societies should be considering this matter, in detail and at once, so that they may not fail their members at a time when such service will be most valuable and important.

◆

Have something to say; say it; and stop when you've done.—TRYON EDWARDS.

◆

See the Detail Men

DETAILING is such an important part of the promotional work of most of the important pharmaceutical firms that it seems certain to be continued indefinitely, with certain alterations in the setup.

First, many of the younger, able-bodied detail men will be called for duty with our armed forces, and their places will be filled, so far as is possible, by older men and those with physical disabilities—and possibly, to some extent, by women. Even so, there will probably be fewer people, and less active and experienced ones, to cover the territory, so you will probably see them less often

and they will not be able to wait all the afternoon to see you.

Second, they will have less to *sell* you (because of restrictions and priorities on some basic raw materials), but more to *talk about*—new products (research staffs are *busy*) and new or substitutive uses of old ones: And remember that the detail men are generally the *first* to know about useful new drugs and appliances, and can thus give you early information.

It will be worth your while to see these men (or women), whenever they call upon you, even if you have to keep a patient waiting for five or ten minutes.

Another matter worth your attention is that of druggists. If you have been sending your patients to some friend or favorite at some distance, where they would have to drive, better look over the local or near-by pharmacies, to find one that is so conducted that you can recommend it to your patients who prefer to walk for their prescriptions.

This will be especially important if you've been doing a good deal of dispensing, because the pharmacists, who are able to buy in larger quantities, may find it easier to get some scarce items than you will; and anyway you won't be wanting to carry large supplies of drugs in these uncertain days, so you'll probably be doing more prescribing than you have done for some time.

✦

The Field of Parapsychology

An editorial in *The Journal of Parapsychology* for June, 1942, discussed interestingly the question, to what field of orthodox science does parapsychology (specifically extrasensory perception—ESP) especially belong, if to any?

In the early years of this type of research, there were about six non-psychologists who showed interest in it, to one psychologist. In the past twenty years, this proportion has been almost exactly reversed; but the psychologists did not *initiate* any of this work.

In the general field of socalled psychic research, the massive urge has been religious *in kind*, and religious leaders, especially among the Spiritists, have played a large part in investigations of general parapsychologic problems, but not in studies of ESP.

The social anthropologists have often reported the results of practices of primitive magic and religion which they were unable to explain by present-day orthodox scientific concepts, and parapsychology seems to offer them rational explanations; but they have not *initiated* any studies in this direction.

The motivation of all the research along these lines appears to have been a blending of a desire to discover the full extent of the operation of human personality in the universe, with a determination to pursue such studies according to the established *methods* of science. Thus we see the impulse that has made the religions and philosophies directed along new pathways.

While the psychologists will probably profit most directly by the discoveries now being made, they offer fertile fields for speculation to every open-minded thinker.

NEXT MONTH

Dr. Malford W. Thewlis, of Wakefield, N. J., will discuss the part to be played by the general clinician in the young but highly important specialty of geriatrics.

Dr. George B. Lake, of Waukegan, Ill., will present a report of the meeting of the Mississippi Valley Medical Society.

The Index for Volume 49 (1942) will appear.

COMING SOON

"Congo Red Following Tonsillectomy," by Paul E. Craig, M.D., Coffeyville, Kans.

"Anemia in Colon and Rectal Disease," by Charles J. Drueck, M.D., F.A.C.S., Chicago, Ill.

LEADING ARTICLES

The Basic Treatment of Allergic Manifestations*

By NORMAN M. SMITH, M.D., *Minneapolis, Minn.*

DR. SMITH

The treatment of allergic manifestations by specific desensitization leaves a good deal to be desired. Dr. Smith offers an entirely new approach to this problem, which bids fair to revolutionize our entire conception of the subject.

HYPERSENSITIVENESS or allergy is a term which embraces many manifestations. Von Pirquet's[1] original definition states, "Any acquired specific alteration in the capacity to react, which occurs in living organisms or tissues, upon exposure to certain living or inanimate agents or substances." The word *specific* refers to the fact that the alteration which is produced by a certain agent can be made manifest only on exposure to that same agent. It is an altered capacity to react. Literally, it is different or altered energy or force.[2]

The difficulty of an understandable definition is apparent. The term *allergy* is used in a loose but widely accepted sense to cover a group of reactions characterized by a heightened response to a particular type or allergen, regardless of the harm or benefit that the altered response confers on the host. All the phenomena of hypersensitiveness could be included under this general label.

In a paper entitled "The Chemical Control of Allergy," Dr. Geoffrey Evans and his colleagues,[3] of London, have advanced a very different and entirely new conception of the cause of the allergic state. This paper develops the thesis that a departure from normal in the chemistry of cellular metabolism, involving the absence of a certain catalyst of coenzyme activity, is the primary cause of the allergic state. If that be true, it is argued, it must follow that, if the missing catalyst could be identified and the deficiency made good, the allergic state itself and the particular manifestations based thereon, whether hay fever, bronchial asthma, migraine, eczema, urticaria, or some other, should be resolved and the patient become symptom-free.

Cellular Metabolism

It may be well to glance briefly at some of the details of the chemistry of cellular metabolism to which these authors have referred, in so far as this is compatible with a clinical publication. Those who wish to make a more profound study of the subject are referred to the work of D. Green,[4] or the recently published volume by Duncan,[5] "Diseases of Metabolism."

From the standpoint of this particular study, it is sufficient to state that cellular oxidation proceeds by the way of dehydrogenation. As one authority states, this process is "carried out by the operation of a complicated series of enzymes and catalysts, whose action is coordinated so that the degradation of the molecules proceeds in a step-like manner." It will be obvious that the absence of any one of the catalysts to which reference is made, or a serious deficiency in its supply, might have very far-reaching effects, and it is in such an absence or deficiency that the British authors have found their basis of an abnormal chemistry, the result of which is allergy.

No claim is made to the discovery

*Received for publication June 17, 1942.

and isolation of the actual cellular catalyst involved, although research into this aspect of the subject is proceeding, but a series of short carbon chain compounds, having two or more unsaturated carbon linkages, were prepared, one of which, *ethylene disulphonate*, was eventually chosen for the original experimental work and it was found that this substance, in a dilution of 1:10-15 (*approximately the dilution in which catalysts of coenzyme activity are present in normal tissue*), would protect consistent percentages of guinea pigs against death from anaphylactic shock.[3] The clinical experimental work undertaken showed that the intramuscular injection of a limited number of doses of 2 cc. of ethylene disulphonate, in the concentration mentioned, would control allergy in man.

As reported elsewhere,[7] I repeated, for my own satisfaction, the animal experiments proving protection against death from anaphylactic shock under treatment with ethylene disulphonate.

Technic

Before describing my clinical experience in a series of 33 cases, it may be well to state briefly the nature of the preliminary preparation of a patient, which experience has shown to be advantageous. The object of the preparation is to secure adequate detoxication and to allow for the elimination of substances inhibitory to the action of the catalyst which may have been part of the patient's regime. This preliminary preparation may be omitted in the treatment of patients in an acute stage, where immediate therapy is desirable. In the chronic cases, however, it undoubtedly hastens response to the specific medication and tends to reduce the number of injections required to produce an optimum result.

The bowel is washed by drinking one quart of physiologic saline solution, hot or cold, one-half hour before rising. This should be drunk as quickly as possible, and is repeated three times on alternate days, the last being on the day immediately prior to the first injection of ethylene disulphonate.† If preferred, two teaspoonfuls of Epsom salts may be taken instead, on four successive mornings, just prior to the injection.

The following drugs are *withheld* during a week before the first injection and for at least two or three months thereafter; sedatives (especially the barbiturates), opiates, alcohol, tobacco, and aspirin. The diet should be adequate and of normal energy value. It is an advantage to avoid meat. Tea and coffee should not be used. The use of added sugar should be avoided. The addition of more than adequate doses of the vitamin B complex and vitamin C affords useful adjuvant therapy. In some cases it is beneficial to give B_1 (thiamin) and adrenal cortex (1 to 2 cc.) intramuscularly, on alternate days, for two or three weeks, in addition.

After the completion of this week of preparation, the patient is ready for the first injection of ethylene disulphonate, the standard clinical dose of which is 2 cc. The injection is made deep into the triceps muscle and, in view of the chemical instability of the material, it is desirable that it should be taken from the ampoule to the syringe and thence to the arm as rapidly as possible. The injection is somewhat painful, and is followed instantly by a muscular fibrillation at the immediate site of the injection.

It may seem redundant to refer to the need of controlling any gross pathology in an allergic patient, regardless of the measures adopted for the treatment of his allergy. Special attention should be paid to possible foci of infection (sinus, teeth, tonsils, gallbladder, etc.) and they should be dealt with adequately before this particular treatment of allergy is employed. The percentage of failures will in this way be materially reduced. Special attention should also be given to making certain that none of the inhibitory substances mentioned are used. Alcohol and the barbiturates are the principal offenders in this respect. Adrenalin or ephedrine may be employed in the usual ways.

Clinical Results

My group of patients, as already stated, so far consists of 33 cases, and if I venture, at this stage, to add to my preliminary report,[7] it is because the clinical results have been of so unusual and outstanding a nature, having in mind current experience in the treatment of allergic individuals, as to justify submitting my experience at this juncture.

The 33 cases in question represented the allergic manifestations, as follows: Asthma, 25; asthma with urticaria or eczema, 6; migraine, 1; skin manifestations, 1.

The following numbers of patients be-

†The ethylene disulphonate used in my animal and clinical investigation was prepared for me by Spicer-Gerhart Company, Sunland, Calif., under the trade name, Allergosil.

came symptom-free in a period varying from three to eight months, and have remained free to date: 21 cases of asthma out of 25; 5 of asthma with urticaria or eczema out of 6; 1 of migraine out of 1; 1 of skin manifestations out of 1, representing approximately 82 percent successes, 8 percent greatly relieved, and 10 percent failures. It would only be wearisome to give the details of each case, and I shall report only a few typical cases, representing a cross-section of my group, in detail.

Case 1: E. K. E., aged 17. This patient's family history is interesting. Her great uncle, a third cousin on her mother's side, and a first cousin on her father's side all had asthma. Her mother's father had migraine headaches. She has had asthma since the age of four, which started after a severe attack of bronchopneumonia. Attacks were worse in the fall and during cold weather. She was rarely entirely free from dyspnea, and used Adrenalin (epinephrine) many times daily. Now, after the first injection of Allergosil, she is completely relieved. Her mother reported that she had the best Christmas during her whole life of eighteen years, because she was free to do anything she chose.

Case 2: A. T. W., aged 74. This man is a retired boat builder and has had asthma for one year. In 1908 he had typhoid fever, and in 1938 a prostatectomy and castration. His early history included measles, chickenpox, mumps, and whooping cough. His year of asthma was very severe. He responded quickly to treatment and his first exclamation, within a week after the only injection he had, was that he could get up in the morning, dress comfortably and speak to his children before they left for their daily work. He considers that he is completely relieved from his bronchial asthma and has had no sign or symptom of dyspnea or asthma for eight months.

Case 3: E. J. A., aged 43, machinist: This patient had no personal medical history of importance, and no family history except that one sister had hay fever. He complained of dyspnea and cough of several months' duration. He had always been well previously, and was able to swim for hours. Now he cannot swim at all, because of lack of endurance and difficulty in breathing. He was given 2 cc. of Allergosil November 28, 1941, all his symptoms were relieved in ten days, and since then have not returned. He works in an ornamental iron shop where there is dust and smoke, but has had no asthma. His ability to swim for hours has returned.

Case 4: S. J. aged 16. This patient has had hay fever for ten years, urticaria for thirteen years, and bronchial asthma for seven years. Her attacks of asthma are severe and keep her out of school about one-quarter of the school year. She is allergic to many fruits and vegetables and to printer's ink. She uses Adrenalin, 1:100, frequently. Miss S. J.'s mother has hay fever; a great aunt and a great-great aunt have bronchial asthma.

This patient had only one injection of Allergosil and, in a few weeks, was completely relieved so that she was able to play basketball on the school team. A physical examination, four months after her injection, did not uncover any objective symptoms.

Case 5: C. J. G., aged 62. This patient has had severe urticaria for six years, mostly on his knees, wrists, and forearms. He has not been able to trace any attack to food allergy. His family and personal history were negative.

He was given Allergosil on November 22, and showed some slight improvement after one month; in another month there was a return of very mild urticaria; but a second injection, at the ninth week, completely relieved this patient of all his complaints.

Case 6: Jno L., aged 13. This boy's asthma began at the age of five and the first attacks were very serious. From the age of five to seven he had many frequent attacks, lasting from three to ten days. The patient carries with him a 1:100 Adrenalin solution for immediate use when attacks come on; also uses ephedrine and Amytal; is out of school almost one week each month and occasionally has an attack at night; and is allergic to fats and dog dandruff. There is no personal or family history of interest, except that his father's brother has asthma.

One month after the first and only injection of Allergosil, this patient played football, which he had not done for three or four years. Six weeks after the first injection he had chickenpox and was in bed for one week. During this illness there was a suspicion of dyspnea on one occasion, but no bronchial asthma, and he has had no symptoms since then.

Conclusions

1. Allergy is an outcome of a disturbance in cellular metabolism, involving the absence or inadequate supply of a certain catalyst of coenzyme activity.

2. Ethylene disulphonate is a catalyst which, given in small quantities and under proper conditions, will bring about the changes necessary in body chemistry to cause allergic patients to become symptom-free in from eighty to ninety percent of the cases treated.

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2 Sulzberger, M. B.: "Dermatologic Allergy." Chas. C. Thomas, page 5.

3 Evans, Bodman, & Maisin: *Med. Press & Circular*, London, 1940, vol. CCIII.

4 Green, D.: "Mechanism of Biological Oxidation." Cambridge University Press, 1940.

5 Duncan: "Diseases of Metabolism." Saunders, 1942.

6 Idem . . . p. 45.

7 Smith, Norman M.: The Cause & Treatment of Allergic Manifestations. Read before the Northwestern Hospital Staff, March 9, 1942.

3014 Hennepin Ave.

Insects, Ticks, and Worms In Human Medicine*

Part I

By GEO. A. SKINNER, M.D., F.A.C.S., *Berkeley, Calif.*
Col. Med. Corps, U.S. Army (Ret.)

Parasitology becomes increasingly important as more and more of our troops are sent to foreign countries, and will continue to be so as they return home. Col. Skinner gives much helpful information.

MEDICAL education, today, is so exacting and extensive that it is not astonishing that there is reluctance, if not actual resistance, to assuming any further burdens. But the relation of parasitology to medicine is so intimate that we may be surprised to discover how many of our common diseases are closely related to insects and other parasites. Such a study will do much to clear some of the obscure etiologies, and greatly simplify isolation and quarantine procedures. This study is necessarily a very brief one, merely indicating some of the more essential points, but leaving the interested individuals to seek detailed information in this now-vast field of literature.

To most of us, "insects" is a name, in general, for everything that is small and flies, runs, jumps, or crawls. In this discussion we will be a little more specific, and confine the word insects to those arthropods that have six legs. Those with eight legs are *arachnids*, and among these the spiders, ticks, and mites are included. Most of the worms that bear upon human economy are classed among the *helminths*.

Insects

There is a justifiable difference of opinion among students as to the most dangerous insect enemies of mankind, but the championship is easily between the two heavyweights, mosquitoes and flies. As malaria is considered by many experts as the most dangerous and destructive diseases that afflicts mankind, and cannot exist without mosquitoes, for this article at least, we concede the championship to mosquitoes and will consider them first.

There may be harmless mosquitoes, but, as time goes on, this view seems to be less tenable, and students of these insects look with suspicion upon all of them. At present, however, of some 1,400 species,[1] we will consider only two, and they are of immediate importance to every medical man in war times, when the call to tropical service may come. But we do not need tropical service to discover the damages that mosquitoes can do, for these two, the malarial mosquito (*Anopheles*) and the yellow fever mosquito (*Aedes*) are almost everywhere, even far into the arctic regions.

Malaria and Mosquitoes

Few of us have comprehended the staggering losses caused to humanity by

*This is the first installment of a two-part article. The second will appear shortly.

[1] Herms, W. B.: "Medical Entomology," 3rd Ed., MacMillan, New York, 1939, p. 159.

malaria. The monetary loss is exceedingly large—startling in fact—even in these times of huge figures in daily use, but it is almost impossible to estimate the lost in life and sickness. Carter says[2];

"It is not in its death rate that the great injury from malaria lies; it is in the sickness rate—in the loss of efficiency it causes, rather than in the loss of life. One death from pneumonia ordinarily corresponds to about 125 sick days—work days lost; one death from typhoid fever to 450 to 500 sick days; one from tuberculosis to somewhat more than this among whites. A death from malaria, however, corresponds to from *2,000* to *4,000 sick days*. The loss of efficiency may be really doubled or trebled, for the man infected with malaria is frequently half sick all the time. The loss of efficiency caused by malaria in this country, in the malarial sections, is beyond comparison greater than that caused by any other disease, or even by any two or three diseases combined, including typhoid and tuberculosis."

TABLE 1.

ANOPHELES	CULEX, (pest of house mosquitoes)
Eggs laid singly; have little floats at the sides.	Eggs laid in rafts of a hundred or so, usually; small trap-door opens at bottom of egg.
Body of larva parallel with surface of water; very short breathing tube.	Larva hangs wtih head well down in water, and a long breathing tube reaches to the surface.
Pupae not so readily differentiated. Breathing tubes, which look like a pair of ears (called trumpets) are quite short.	The ear-like breathing tubes or "trumpets" are distinctly longer.
Adult rests on surface with body at an acute angle to that surface—"Stands on its head."	Adult rests with body parallel to surface.

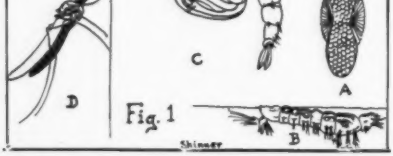


Fig. 1

Fig. 1: An *Anopheles* mosquito (*maculipennis*). The eggs are laid singly, and while often in groups, are not glued together as are the culex eggs. Each egg has an air pocket or float at either side (A). The larva has a very short breathing tube and lies with body parallel to the surface of the water (B). It is a surface feeder and easily poisoned by arsenic dusted over the water, whereas the mosquitoes with long breathing tubes feed well below the surface and escape the poison. The pupa (C) is frequently mistaken for the larva, as it is very active, but easily distinguished upon closer examination. The adult anophelene mosquito rests with its body at an angle of about 45 degrees to the surface (D). This is an important and easily noted difference. Males are readily distinguished by the "beard," as their antennae are heavy and feathery (plumose).

The tertian (*Plasmodium vivax*) is by far the most common and exists in most parts of the United States at some time. In northern states it will probably never gain a strong foothold, though the anopheles mosquitoes are present in many places, but the cold weather interrupts their cycle too long each year to make it a serious menace. But malaria cases do occur in our most northern states, especially where there is a large influx of summer tourists from southern states, such as we find in Minnesota.

The quartan form (*Plasmodium malariae*) is fairly common in warmer countries. The malignant or estivo-autumnal (*Plasmodium falciparum*) is mostly tropical and subtropical, but I have seen such cases in northern localities, mostly "hangovers" from tropical residence. The fourth form, (*Plasmodium ovale*) causes a rather milder form of fever, so far found only in Africa.

While these forms of malaria are thoroughly familiar to many physicians, in their regular practice or by reference to the literature, the life cycle of the malarial parasites is less well known. Generally this cycle is the same for all forms of malaria. There are really two cycles, one in the human host and

[2] Carter, H. R.: The Malarial Problems of the South. *U. S. Pub. Health Rep.*, Vol. 34, No. 34 (1919), pp. 1924-1935. (Quoted by Herms.)

the other in the mosquito. The parasites are active and can be transmitted to the human host as long as the mosquito lives. Only the female mosquito transmits malaria.

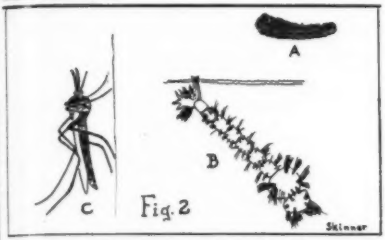


Fig. 2: The common household mosquito (*Culex pipiens*). At upper right (A) is an egg mass, easily seen in summer on rainwater barrels, ponds, and pools. Some 200 eggs are usually in each mass. Fully developed larva hanging head down, with long breathing tube at water surface (B). All larvae must have air or they quickly perish. The fully developed female (C). Note that the body is parallel, or nearly so, to the surface on which she rests.

In time, a certain resistance to malarial infection develops, but the protection is never complete, and a more or less chronic invalidism results. Several groups of parasites, developing at different periods, may be in active operation at the same time in the same patient, so that a chill may come every day, or even twice a day. Also it is possible for these three forms to exist in the same person at the same time, and I have seen such infections in the Philippines. This complicates the picture clinically, but fortunately the microscope will clear the diagnosis.

Treatment is usually effective, but there is a question among malariologists as to the advisability of a complete cure, if the patient must remain in the infected region, as all immunity is then lost. Generally, now, the treatment is carried to the point of reducing attacks to a minimum, but no effort at complete destruction of all the parasites is made.

The eggs, larvae, and adult mosquitoes, of the malarial and "pest" varieties, can be readily recognized, and every medical man should know these simple differentiations (see Table 1 and Figs. 1 & 2).

Male mosquitoes do not bite, as they have no equipment for penetrating the skin, as the lady mosquitoes have. The female mosquitoes are provided with a highly efficient tool kit (see Fig. 3) and do not bite, but *saw* through the skin with neatness and speed. The males are readily recognized by the plumose antennae (beards), which are large and readily seen with the naked eye[2]. *Aedes* mosquitoes are not so readily differentiated, but can be easily recognized by those who make some effort at learning their characteristics.

The mosquitoes that cause yellow fever (*Aedes*) also transmit the virus of *dengue*. Various forms of filariae are also transmitted by mosquitoes, and such cases are quite common in many tropical regions.

Flies

To most of us, "fly" means the com-

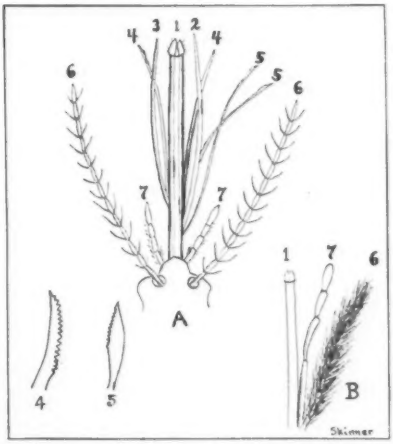


Fig. 3: A—Tool kit of the female mosquito. The sketch has been made diagrammatic in order to show the parts clearly, as in the microscopic specimen it is very difficult to separate them and show them all in one specimen. The numbers are the same in all the sketches.

1. Proboscis or lower lip, acts as a case or scabbard for all of the cutting tools and has a channel in which they rest when not in use. At the end are two little tips, probably feelers, and called *labella*.

2. Food channel. This has a very tiny canal, so the blood must be liquid to pass through it.

3. The salivary duct passes through a modified tongue (hypopharynx) and through this the mosquito injects the saliva that keeps the blood liquid, and also irritates its victim and causes severe itching.

4. The upper jaws *(maxillae)* which are the real cutting tools. Note the remarkably perfect saws at the ends. Often the number of teeth is of value in identifying the mosquitoes, as the teeth differ in number in different species.

5. Lower jaws *(mandibles)* which also have saws at the ends, but are not so heavy or powerful as the upper jaws.

6. Antennae. In the female they are not very hairy, but in the male (B) they are plumose and can readily be seen with the unaided eye. The male lacks the cutting tools of his consort.

7. *Palpae*, really a part of the feeding apparatus; much longer in the male than in the female. The lower left corner shows greater enlargements of 4 and 5.

mon house fly (*Musca domestica*), and this variety is the one we usually see (see Fig. 4), but the number of varieties of flies is legion, and many of them are exceedingly destructive to human and animal life, directly or indirectly. The ordinary house fly is dangerous through its filthy habits and the ability to spread infections of all sorts by bacteria, which it is ideally built to distribute with its hairy body and sticky feet. These flies do not bite. *If flies bite, they are not house flies.* There are many other varieties that do bite, some looking almost exactly like house flies.

Flies of all kinds breed with great rapidity, but differ markedly in this respect. Some lay eggs, which hatch into maggots; these bury themselves in the ground and become pupae; then fully develop into flies. They do not change after this. If you see small flies, they are not young flies, but a small variety of fully developed ones. Some flies produce living larvae, which may develop quickly or may remain latent for a long time. Sometimes the eggs hatch so rapidly that the worms seem to have been deposited by the fly. In some cases the fly will deposit a number of eggs in a "strike" (while passing on the wing) and practically without alighting.

Biting flies may kill thousands of cattle annually, and make life miserable for men. Others may ruin many hides by numerous perforations, caused by the exit of larval forms. Some deposit eggs in the noses of animals, or even of men, and cause great distress or death.

Most animals have fly larvae in the stomach or intestinal tract, and many flies depend upon this protection for a part of their life cycle. The bot flies are pests to almost all domestic animals, sometimes disastrously so. The tabanid (horse) flies will drive animals frantic, and often kill stock by the great amount of blood drawn. Their bites are painful and may transmit *anthrax*.

The transmission of typhoid fever and intestinal infections to man by house or other flies is well known. They have been accused of transmitting *poliomyelitis*, and this now seems to have been confirmed. In Africa, the tsetse flies have depopulated large areas, and have threatened all human life in other localities through *sleeping sickness*.

Flies are practically everywhere, and if it were not for numerous insects, birds, animals, fish, and reptile enemies, no human life could exist on account of these and other insects. But we need still more protection than these afford, and while we cannot eliminate flies, they can be largely controlled by proper sanitary methods, which consist of preventing their breeding and eliminating their food supplies. It is not an easy task, but it can be and has been done. They must have abundant food, and organic matter in which to breed. In cities, it is possible to almost eliminate flies by screening, removal of organic matter (garbage, manure, lawn clippings, etc.), and by preventing their access to food. Poisoning, trapping, adhesive fly paper, and swatting are other measures that assist in the fight, but the greatest dependence must be upon prevention. For rural methods of fly prevention, a number of agricultural bulletins are available, with explicit directions.

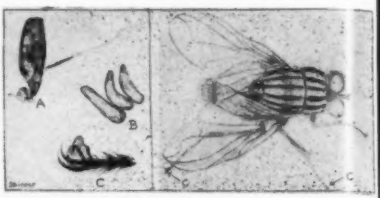


Fig. 4: The House Fly (male), well called the "typhoid fly" though its abilities in spreading diseases are not limited to typhoid. Note the hairy body, legs and wings. A—The peculiar antennae; B—the eggs, which hatch very soon after being deposited in organic matter—usually filth, but any moist organic matter will serve; C—foot of fly showing claws and large, sticky pad (*pulvillius*), by means of which the insect is so easily able to walk on smooth vertical surfaces or suspended from a ceiling. The pad is admirably fitted to collect germs of every variety from the filth in which the fly breeds, and direct transport from latrine to kitchen is a common occurrence.

A partial list of the diseases that have been definitely proved to be conveyed by flies includes cholera, typhoid fever, dysentery, diarrheas, tuberculosis, tularemia, filiriasis, ophthalmia, trachoma, yaws, tape worms, sleeping sickness, and myiasis. This is enough to place them definitely among our most destructive enemies, and the list will undoubtedly grow in the future.

Infants and young children should never be allowed to sleep in the open unless protected by screening, for nose and eye infections are much more common from fly attacks than is generally supposed.

(To be Continued)

The Prostate Gland and Rectal Troubles

By WINFIELD SCOTT PUGH, B.S., M.D., *New York, N.Y.*

Prostatic troubles are extremely common, and much can be done to relieve them if they are diagnosed early. Dr. Pugh here makes some helpful suggestions.

A RECTAL surgeon of extensive experience recently chided me, to the effect that there seemed to be no part of the body, outside their particular domain, that urologists know so little about as the rectum. "Yet," said he, "from a standpoint of anatomic development, the rectum and reproductive organs of the male are rooted in a common origin." The truth of my colleague's comments was known to me long before he uttered them. They are facts one quickly recognizes in any research work. While carrying on such a series of studies, I asked an intern something about the rectum and its relation to disease. The lad replied, "The rectum offers the best route through which to massage a prostate gland."

Everyone who has given a bit of attention to anatomy must also realize the close association of nerves, vessels, and muscles in these intimately related parts, and can see why pain arising in one of these areas is often referred to the other.

Many men suffering from prostate disease find their way into the office of a rectal specialist, and every urologist encounters sufferers from chronic constipation, painful stools, and piles, many of whom owe these symptoms to chronic disease of the prostate. When the so-called enlarged prostate becomes apparent, many patients will tell us of straining during micturition and while having a bowel movement, and with less severe prostatic disease, some of these elderly men will lament more over their piles than over the real source of trouble.

When the seminal vesicles are involved, the proctologist will tell us that often the complaint that brings such patients to his office is pain just before or during a bowel movement. But of a certainty that is not the *first* evidence, as many of these men will carry on for years without medical attention, in the presence of other symptoms, seeing the physician only when pain enters the picture. One of these gentlemen not long ago told me that he never had any pain until recently. When I replied, "How unfortunate!" he was startled. I meant just what I told him, and am sure some day intelligent people will realize that pain is really a good friend.

Mr. C. B. was 68 years of age, when he visited a rectal surgeon, complaining of hemorrhoids. When asked regarding his health otherwise, he became a bit ruffled that anyone should suspect any previous illness. "Why doctor," he said, "I have never had a day's sickness in my life, but I suppose a fellow just has to expect these dratted piles on approaching the three score years and ten mark."

This gentleman was wrong as to his good health; for when the physician looked at him, it became apparent there was no vision in his left eye. By a series of cleverly put questions, the fact was elicited that this patient had suddenly become blind five years previous. While suffering from a cold he had, on one occasion, some difficulty in passing urine; in fact, it was necessary to use a good bit of force for the otherwise easy function. Just as urine emerged from the urethra, he thought some one had put out the bathroom light on one side. On turning the other eye, however, the illumination was still evident. It soon became apparent that the left eye was blind. He said nothing about it, but the facts soon dawned on the family. The reason was simple, for he had an enlarged prostate that had been developing insidiously for years.

Attacks of difficulty in urination had been occurring for a long time, but the village barber said hot baths would help Mr. C. B., and they did just that. The inevitable, however, will not be put off. Undoubtedly the back pressure of retained urine on his kidneys accelerated the development of arterial hardening, which is prone to appear in such structures as the small vessels of the retina. A little extra exertion, as in urination or moving the bowels, increases the blood pressure and the little vessels break, a hemorrhage occurs in the eye, and vision is gone. Some folks, however, are fortunate in recovering their sight. A number of years ago, a president of the United States went through this ordeal.

The rectal specialist, in this instance, was a curious fellow and, much to Mr.

B's annoyance, wanted to find out things. For instance, when the patient was subjected to a rectal examination, the prostate seemed to fill the entire front section, so that it must have been difficult for him to have a bowel movement. No doubt the straining at stool produced the piles, as it often does. Under some pretext, the physician inserted a catheter (after C. B. had apparently passed urine), and found 20 ounces of residual urine in the bladder. An abdominal examination also revealed the bladder to be quite distended. In fact, that organ was always partly filled with infected urine and a chronic bladder inflammation was present.

Mr. L. L. was 40 years of age when he called upon a proctologist for relief of pain during defecation. "Oh, doctor, my rectum is so hot that I can hardly sit down," was L's greeting to the medical advisor. "You see, sir," he continued, "about five or six years ago, I had a terrible attack of dysentery. Following that, I became so constipated that when I went to stool it was just like mother giving birth to a child. I am sure the pangs of labor were no worse than my suffering. I soon noticed that there were some breaks in the skin around the anus and went to a doctor, who said they were fissures in the skin. I was stretched and burned, all to no avail."

It does not seem possible that this man could have gone through years without a word being said regarding the urethra, but if we are to take the patients' word, that is just what happened. On the other hand, patients do not always tell the truth. My rule is to *treat what I find*, and use the history only as a backlog.

Mr. L. L. obtained no relief from the supposed rectal trouble. Finally he began to think that his dirty urine might have something to do with it, and so the truth came out. After denying any possible urinary or venereal disease, this gentleman finally admitted an old "strain."

There is no such thing as a "strain" in connection with genital disorders. When this word is used, the disease was *gonorrhea*, even though the attack may have been a mild one and the acute symptoms quickly subsided, and always leaves scars, usually in the form of an old, slowly-developing stricture, or a chronic inflammation of the prostate gland.

The examination of this man revealed a dirty, cloudy urine, full of strings and pus, and a badly damaged urethra, which seemed to be lined with cobble stones — inflammatory swellings, left from the old gonorrhea. On more detailed examination, the gland ducts coming from the prostate gland, and also the ducts of the seminal vesicles, were found full of pus. When the rectum was looked into, it revealed a greatly swollen prostate gland, which seemed extremely painful and felt lumpy, indicating numerous small abscesses.

This was a severe case of chronic inflammation of the prostate, with considerable pus formation. If this man had put all his cards on the table when he first visited a physician, he would have been saved much trouble. But that "is not being done," because of our mock modesty regarding sex, the sex organs, and their diseases. This man's trouble was eventually cleared up, after a long series of treatments directed to the real seat of disease.

Mr. V. K. was 71 years old when he went to the consultation room of a rectal specialist, complaining of bleeding piles and painful bowel movements. Like many of these elderly folk, he was a little boastful about his previous good health, declaring that there had never been any urinary difficulty so far as he could recollect. "Stop the bleeding from these piles, and everything will be all right," he insisted.

A preliminary examination revealed that he really *did* have piles, but that does not by any means end the story. As the examination proceeded, the physician thought the patient's prostate was rather hard—in fact, board-like toward the rear surface—and there were little spikes in each upper prostatic corner. "I think a consultation with a urologist is necessary," was the physician's final comment.

The urologist noted a marked distention of the lower abdomen, which the patient declared was gas, from which he had been suffering for years. He was mistaken! It was not gas, but water — a distended bladder.

This man had an almost complete obstruction of the urinary flow, caused by a very large prostate gland. When told this, he said, "Not only do I have no interference with the urine, but it flows away almost all the time." Again he was wrong, for when there is great obstruction to the urinary outlet, there is also an almost constant leakage.

In summary, the hard, brawny prostate with the spikes meant *cancer*, which, once felt, should never be forgotten. Mr. K. refused to believe that he

had a malignant growth, but died of it about two years later. People are often deceived by the slow extension of this form of cancer.

This gentleman's previous history showed that he had all the symptoms leading up to prostatic enlargement but, like many others, he contended that they merely represented advancing years. Remember that growing old does not necessarily carry with it every form of discomfort. When that happens, find out what causes the annoyance.

104 East 40th St.

The Periodic Examination of the Soldier

By HERMAN GOODMAN, M.D., *New York City*

Every junior medical officer must examine soldiers periodically. Here are some terse suggestions that will make this work easier, especially for those who are new at it.

THE medical officer called upon to conduct a periodic examination for venereal disease ("short-arm inspection") should have a table at his side, arranged with writing materials, case report blanks, and history sheets. He should have a *working* pen and ink. There should also be slides for smears, urinals, rubber gloves, finger cots, and glasses for the *three-glass test*. Paper towels, soap, and a hand antiseptic should be near by, at running water taps or at the wash basins.

The soldier's clothes should be so arranged as to permit rapid exposure of the lower abdomen, thighs, buttocks, and anal cleft. The medical officer should be seated, and the light should be ample to illuminate the areas to be examined. Sheets, curtains, or other material should be hung, to permit some degree of privacy.

The physical examination should include:

1. Inspection of the skin of the abdomen, thighs, genitals, back, buttocks, perianal region, and the preputial cavity, particularly the sides of the frenum.

2. Palpation of both groins and of the scrotum and its contents.

3. Retraction of the prepuce (where present) and inspection of the corona, frenum, glans, and meatus; and compression of the urethra, from the penoscrotal junction to the meatus.

4. Collection, upon a clean microscope slide, of any material appearing at the meatus.

5. Making adequate records of the physical findings.

6. Reference to a hospital laboratory for special examinations, such as microscopic study for Ducrey's bacillus, darkfield examination, etc.

7. Field units may examine smears for gonococci. Gram staining is advised. The methylene blue stain is practical, but not reliable.

It is not necessary to examine the prostate or secretions secured by expression, in sub-clinical cases of suspected urethritis.

The presence of *pediculosis* and any evidence of clinical lesions of *scabies* should be determined and recorded.

Routine examination of the spaces between the toes and of the soles, for *tinea*, may be made part of the "short arm" inspection, if sufficient time and medical personnel are available.

The hour of such an inspection should not be announced, and no opportunity should be afforded to visit the latrine prior to examination.

Literature on prophylaxis should be distributed and, if the medical officer has the knack, a short talk is in order. Not every medical officer is *en rapport* with men. A poor speech is *not* in order —better none.

A good speech requires consideration of the following:

1. Avoidance of exposure to infection with venereal disease.
2. Prevention of infection, if it is impossible to resist the temptation of exposure.
   - A. Physical barriers (condom or sheath)
   - B. Chemical prophylaxis
   - C. Early and supervised prophylactic treatment
     - a. Location of stations
3. Detection of disease
4. Treatment of the patient by a medical officer
5. Determination of a cure
6. Absence of immunity
7. Education — question and answer session.

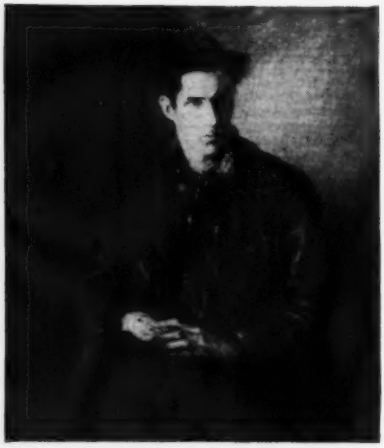
18 E. 89th St.

A LIVING FOR THE DOCTOR

THE BUSINESS OF MEDICINE AND THE ART OF LIVING

Physicians' Art Show

WARTIME conditions did not dampen the ardor of the members of the American Physicians' Art Association, for their fifth annual exhibition, held at Atlantic City, N. J., last June, was the most successful so far. Doctor-artists, to the number of 161 showed 350 paintings, statues, etchings, photographs, pottery, and other art objects; 130 attended the annual banquet; and 15,000 people



Man in Leather Coat (Oil)
By Alfred Broun, M.D., New York City

came to see the show. Here are small reproductions of two of the paintings.

Prizes (72 of them) were awarded in four classes (according to the length of time the individuals had been riding their particular hobbies), so that each was competing with those in his own class.

The exhibitors were from all over the country, so that the show was truly national in scope, and we all should be proud of our confreres who are able to produce works of art that compare favorably with those of professionals.

If you want to see what kind of work

Late Snow, Maryland (Oil)
By Charles H. Smith, M.D., New York City

these fellows are doing, join the A.P.A.A. and you will receive a copy of the second splendid issue of *Parergon**, more than three times the size of the first issue and containing black-and-white reproductions of about 500 of the art works that have been shown since the first issue appeared. It, alone, is worth the $2 dues, even if you are not an artist—outside of your profession, of course.

There are honorary memberships (at $1) for laymen (your patients and friends) who would like to have a hand in forwarding this most rewarding of hobbies. They'll get copies of *Parergon*, too.

Write to Dr. Francis H. Redewill, Secretary, A.P.A.A., Flood Building, San Francisco, California (mentioning "C. M.") for full particulars about these memberships G. B. L.

*Published by Mead, Johnson & Co., who have been sponsoring the Association, which is now very nearly self-supporting.

The Men Who Play God

If this brief bit about members of the medical profession, whom we salute, verges on the sentimental, we ask their indulgence. It is only that we have seen their hands, firm yet gentle, bring life into the world. It is because we have seen them paint, with the flush of our own life's blood, the pallid cheeks of an ailing son. It is because we have seen their hands, in the long watches of the night, shield the unsteady flame of life against a sudden gust of death. It is because we have seen them close the eyes of a loved one in the final sleep.

What span of human service encompasses so much? How can any occupation which so intimately orders the lives of others be measured in terms of worth? What other job so combines the role of confidant, counselor, and friend? From the cradle to the grave their ministration, tireless, sympathetic, hopeful, patterns our existence. As the sculptor leaves traces of his handiwork, so do all lives indelibly register the touch of these good and honest men. And as there is no material way of measuring the value of their ministration, so it is difficult to plan their tribute. Yet to them is given a satisfaction beyond the ken of ordinary folk. They are the men who play God. —Reprint of *Peoria (Illinois) Star* Editorial, in Better Health Section, April 28, 1942.

◆

Science and Art

Science is accurate thinking about how things should be done, and art is the accurate doing of things, intuitively.

Some physicians know the science of medicine, but are deficient in the art of its practice; some have the art, but too little science; both of these types render service. But the man who stands on a pedestal, admired and loved by those he serves, is the man who has both the science and the art.—RALPH R. PATCH, in *Patchwork*, July-August, 1942.

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A New Medical Calendar

A unique medical calendar, designed for use by both physician and patient, is now being distributed to physicians by the Medical Research Division of the Schering Corporation. It is of standard size for a physician's files and also contains the routine space for history, physical examination, and other data; the style for patients folds to a convenient size.

Although primarily planned as a menstrual calendar, it may be employed, by using simple signs and symbols, in recording a wide variety of medical disorders, symptoms, and treatment. Pertinent information recorded on the patient's calendar may be easily and accurately transcribed to the physician's calendar, providing an objective record of day-to-day symptoms and therapy, and eliminating "guesswork" on the patient's part.

Physicians who wish a supply of both the physician's and patient's calendar, may obtain them by writing to the Medical Research Division, Schering Corporation, Bloomfield, N. J., mentioning CLINICAL MEDICINE.

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The products we advertise are worthy of your attention. Look them over.

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Need for Hobbies

Some physicians seem great when they devote their full time and energies to their patients and medical society work, even letting lectures and clinical sessions serve as "their hobbies;" but such a life, excluding family and the other elements of normal living will sooner or later exhaust the wellsprings of their partial greatness.—*Westchester Med. Bull.*

BOOKS

PHYSICIAN'S ACCOUNTS

Colewell

THE DAILY LOG FOR PHYSICIANS. *Designed by a Physician for Physicians* (1943 Edition). *Champaign, Ill.: Colewell Publishing Co. Price $6.00.*

Now, more than ever before (with taxes high and rising and civilian doctors working twice as hard as usual), it is important that physicians on the home front have a system for keeping full records of their financial affairs with a minimum expenditure of time and effort, and with maximum efficiency. Such a system is offered by the Daily Log, which has a specific place for recording every professional transaction *at once*, so simply that no special knowledge is required to use it; keeping records of appointments; figuring expenses for income tax purposes; and many other important mattters. If used consistently, it will save any doctor many times its modest cost. No better method is available.

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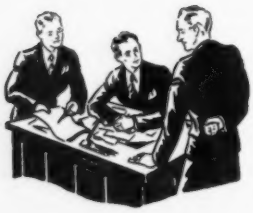
It is a great misfortune neither to have enough wit to talk well nor enough judgment to be silent.—LA BRUYERE.



GRADUATE COURSE

VIII. Congestive Heart Failure

The Pathology of Congestive Heart Failure

By A. B. RIMMERMAN, M.D.
Attending Physician and Director of Cardiac Clinic and

HANS POPPER, M.S., M.D., *Director of Clinical Laboratories, Cook County Hospital, Chicago, Ill.*

THE pathology of congestive heart failure offers two problems: (1) The pathologic changes in the heart or in other organs which cause congestive heart failure; and (2) the alteration of the various organs as a result of the failure.

Pathology of the heart causing failure appears to be a simple problem. Up to now, however, neither anatomy nor histology has furnished the real answer as to the cause of congestive heart failure. The final cause is always a failure of the heart muscles, either because of a primary disease of the myocardium or because of its inability to compensate for disturbances of the circulation due to pathologic changes elsewhere. One considers, at present, the variable functional reserve of the myocardium as the reason why cardiac decompensation may occur in clinically or pathologically different stages of organic heart diseases.

A correlation of the functional status of the heart muscle and its physiologic reserve with the histologic picture of the heart muscle is at present nearly impossible, even if sensitive and modern histologic methods are used. The changes which impress us most under the microscope, such as local infiltrations or local necrosis, indicate that something is wrong with the heart muscle, but fail to give us an idea as to the failure of the muscle cells themselves. Their pathology is recognized only if rather severe changes exist, such as fatty degeneration and fragmentation. The pathologists of yesterday were more interested in lesions impressive to the naked eye, like valvular lesions, cardiac malformations, and changes of the aorta. Only recently has the interest shifted to the pathology of the myocardium, partly due to the understanding of the clinical significance of the failing myocardium in the development of congestive heart failure, partly because electrocardiography has improved the clinical means of diagnosing myocardial damage.

Toxic, Degenerative, and Deficiency States

Degenerative, inflammatory, and vascular lesions of the myocardium may cause congestive heart failure. As in other organs, parenchymatous or albuminoid degeneration develops in the myocardium in toxic or infectious conditions, supposedly as a precursor of irreparable fatty degeneration. The difficulty in the histologic recognition makes it hard to determine if the heart failure present in various toxic conditions is directly due to visible protoplasmatic disturbance. Fatty changes, in severe toxic conditions, probably account for heart failure in the early stages of diphtheria, or in typhoid fever and influenza. Similar changes are found in acute and chronic anemia.

In chronic anemia (pernicious, sickle-cell, and even secondary, iron-deficiency anemia) congestive heart failure may develop and, clinically, be confused with valvular lesions because of the presence of murmurs, though the underlying pathology is only a fatty degeneration of the myocardium.

Nowadays, vitamin B_1 deficiency is often considered a cause of congestive heart failure. Beri-beri, in the Far East,

was known to produce edema and heart failure, but only recently subclinical vitamin B deficiencies in this country are considered as a cause of cardiac decompensation. Anatomically, a peculiar dilatation of the right heart, especially of the pulmonary conus, is characteristic. Histologically, an interstitial edema and, to a smaller extent, a hydropic swelling of the muscle cells is the cause of the thickening of the wall and heart failure.

Alterations of the wall or the lumen of the coronary vessels are a common cause of congestive heart failure. Its development depends on the extent of the lesion and its localization. If the conduction system is involved, the subsequent disturbance of the cardiac rhythm is much more prone to cause heart failure than if another part of the heart muscle is concerned. In syphilis, the coronary arteries as such are not involved, but occlusion of the coronary ostia by specific granulation tissue in the aortic wall has the same consequences as a narrowing or occlusion of the coronary arteries themselves.

The type of vascular lesions is also important. The changes in the coronary arteries and their branches are mostly on an arteriosclerotic basis—thickening of the wall with narrowing of the lumen, due to infiltration of the former by hyaline or fatty masses, with subsequent calcification and fibrosis. Only rarely the uncommon vascular diseases are responsible, such as periarteritis nodosa or thrombo-angiitis obliterans. Changes of the wall may cause thrombosis and subsequent myocardial infarction. Myomalacia may cause congestive heart failure even some time after the infarction, in the stage of scarring. A similar condition may develop as a result of an embolus.

The requirements of the myocardium for nutrition and oxygen vary the significance of the anatomic lesions. With increased demands on the heart, the blood supply increases. If this increase is prevented by anatomic changes, myocardial damage results. The condition of the blood plays a similar part. A normal amount of blood, if markedly anemic, may be insufficient for the nutrition of the myocardium and be a cause of congestive heart failure. The concurrence of these various anatomic and functional factors causes the variety of the clinical and anatomic pictures in coronary sclerosis. The histologic picture often resembles that of myocarditis, especially in the repair stage, when lymphocytic infiltrations and granulation tissue are most prominent.

Despite intensive studies, to compare the clinical picture and the results of electrocardiography with the development of coronary sclerosis and subsequent nutritional disturbances of the heart muscles, a real correlation between the anatomic picture and the appearance of congestive heart failure is still lacking. There may be no decompensation when a great part of the myocardium is destroyed; and we find it sometimes without impressive changes of the coronary vessels or the heart muscles. Again the answer lies in the functional ability and reserve of the intact muscle fibers, and the histologic examination does not reveal it.

Inflammatory Lesions

The inflammatory myocardial lesions can be divided into those on an infectious basis, which may or may not be combined with endo- and pericarditis; the specific myocarditides; and the isolated diffuse or granulomatous lesions. In nearly all infectious conditions, inflammatory lesions of the myocardium may be found, often associated with the degenerative lesions mentioned. Thus, in diphtheria, the heart failure in the first days is associated with the fatty changes; in the later stages with inflammatory changes; but also in influenza, pneumonia, measles, whooping cough, and especially scarlet fever, myocardial lesions may develop which, *years later*, cause congestive heart failure.

In both typical bacterial endocarditis and the atypical type of Libman and Sacks, now associated with *lupus erythematodes acutus*, myocardial infiltrations are found and, combined with the valvular lesions, may cause heart failure. Rheumatic myocarditis, characterized by the different stages of a specific granuloma (the fully developed form called Aschoff body), offers the same problem. Endocardial and pericardial lesions remain in the foreground of the anatomic picture, but an intact myocardium may overcome the circulatory difficulties produced by such lesions. If the myocarditis reduces the functional ability of the myocardium, congestive heart failure develops.

The etiology of rheumatic fever is still not established. Many incline, nowadays, to an allergic basis. If the relatively few, who assume an unknown specific bacterial cause, are right, the rheu-

matic heart is to be grouped among the otherwise-rare specific granulomatous myocarditides, such as tuberculous, syphilitic, protozoal, and helminthic. All those may occasionally cause chronic congestive heart failure, but very seldom will the clinician be able to elucidate the cause.

An unspecific form of myocarditis, with diffuse interstitial round-cell infiltration, is rare, but the pathologist will occasionally consider such a myocarditis as a cause of congestive heart failure. Some feel that such cases are tuberculous in origin, despite the lack of specific granulation tissue. Pyemic myocardial abscesses are of little clinical importance, because most of them develop terminally.

Valvular Lesions

In a discussion of congestive heart failure, the most prominent place is usually given the valvular lesions, most of which are on a rheumatic basis, that may be responsible for any type and any combination of valvular involvement. Next in importance is the syphilitic form, which causes only aortic insufficiency. Congenital malformations are rather rare, and more so are cases of non-rheumatic endocarditis causing congestive failure.

The picture of the valvular lesion is well known to any clinician, and the investigations of the last years have added little to the classical concept. Again we want to emphasize the point that one now feels that *the functional state of the myocardium* is the determining factor for the development of congestive heart failure with valvular lesions. Most authorities now feel that arteriosclerosis, as such, does not produce stenosis, but it may enhance a pre-existing rheumatic valvular lesion to a degree that functional stenosis develops, in older people, and causes congestive heart failure.

It is well known that chronic adhesive pericarditis interferes with the proper function of the heart and may cause heart failure. Operative cardiolysis may improve the situation. Less well known is the interference with the circulation in exudative pericarditis, not only by compression of the heart by the exudate, but especially by distraction and compression of the angular junction between the hepatic veins and the inferior vena cava. Hemopericardium and hydropericardium, as seen in acute nephritis, have similar consequences.

Extracardiac Lesions

Among the changes in other organs than the heart which may cause congestive heart failure, alterations of the elasticity or configuration of the larger vessels should be mentioned, the typical example being arteriosclerosis. Any resistance to the blood flow, in whatever organ, increases the work of the heart, and the blood pressure between the heart and the site of the resistance increases. First, the wall of the heart chamber concerned thickens while the cavity remains unaltered and concentric hypertrophy without marked enlargement of the heart figure results. If the myocardium is unable to overcome the resistance, the cavity dilates and the heart figure enlarges (excentric hypertrophy); the blood return into the dilated chamber is impaired; and congestive heart failure develops. Primarily this process involves only one chamber, but subsequently the other chamber has to compensate, and hypertrophies and dilates also.

The right heart is involved in increased pulmonary resistance, as in emphysema, due to stretching of the capillaries in the pulmonary septa; in kyphoscoliosis, due to compression of the lung; in pneumoconioses, due to compression of the capillaries; and in Ayerza's disease — pulmonary arteriosclerosis. Cor pulmonale develops, with hypertrophy and dilation of the right heart and consequent congestive heart failure.

An example of increased resistance in the general circulation is congenital coarctation of the aorta, which, however, relatively seldom leads to heart failure, in contrast to increased peripheral resistance in the arterioles in the disease associated with arterial hypertension. The chief resistance in all of these conditions is offered in the renal arterioles, independent of the etiology of the disease, whether the hypertension is secondary to chronic nephritis or other renal pathosis, or whether primary (socalled essential) hypertension is present, the origin of which is not established. In all of them, congestive heart failure results if the myocardium is too much strained. Coronary vasoconstriction may enhance this development by impairing the nutrition of the heart muscle.

Among the *endocrine factors* influencing the heart muscle, and thus representing a possible cause of heart failure, the thyroid gland has to be men-

tioned in the first place, the heart failure in hyperthyreosis being the outstanding example.

Congestive heart failure causes changes in various organs, the development of which is rather variable, and no definite reason can usually be elucidated why, in heart failure, the changes in some organs are much more conspicuous than in others.

In the liver, cyanotic atrophy may develop—in tricuspid insufficiency or constrictive pericarditis even a *cirrhose cardiaque*. The congestion in the kidney may be superimposed on a pre-existing nephritis or nephrosclerosis, and may sometimes be the exciting factor in the development of uremia. Lung edema is the result of left and right heart failure; in left heart failure, brain edema is more prominent. As a matter of fact every organ may reveal pathologic changes as a result of the heart failure.

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The Treatment of Congestive Heart Failure

By NATHAN S. DAVIS, III, M.D., F.A.C.P., *Chicago, Ill.*

Asst. Prof. of Med., Northwestern Univ. Sch. of Med.

THOUGH coronary heart disease, with anginal failure or thrombosis and cardiac infarction, has been discussed more often in the current medical literature, congestive heart failure still occurs more frequently.

Left heart failure frequently develops in the types of heart disease that result from coronary artery disease, in hypertensive cardiovascular renal disease, in rheumatic and syphilitic heart disease, and in some of the less common forms as well. Right heart failure most often develops as a result of mitral stenosis, but may also be caused by anything that interferes with the pulmonary circulation or following an infarction of the right ventricle. It may also develop after left heart failure has been present for a long time.

The onset of auricular fibrillation or flutter, of a prolonged attack of paroxysmal tachycardia, or of a heart block with marked bradycardia may result in the simultaneous development of left and right heart failure. Under such circumstances the symptoms of left heart failure are apt to dominate the picture, even though signs of congestive failure also develop in the portal and systemic circulation.

Signs and Symptoms

The most common signs of left heart failure are breathlessness and palpitation, with rapid heart action on relatively slight exertion. If the heart is not enlarged, these symptoms are probably due to pulmonary disease or asthma. The dyspnea may be constant or paroxysmal. *Paroxysmal dyspnea* is a more serious sign in patients with coronary heart disease than in those with mitral stenosis. Sighing respiration is a nervous and not a cardiac symptom. Cheyne-Stokes respiration is usually a late manifestation, which is a serious sign of circulatory failure if it occurs while the patient is awake.

Cyanosis may be a sign of marked left heart failure, though it is more often of pulmonary origin. It generally develops in patients with left heart failure, who also have emphysema or some other lung pathosis. If a unilateral hydothorax develops, in a patient with evidence of heart failure, it usually is a right-sided lesion. A left hydrothorax is more often caused by pulmonary infarction or pleurisy with effusion. Moist râles, especially in the bases of the lungs, are usually indicative of left heart failure *when they are bilateral*. Sonorous râles may also be caused by pulmonary congestion. Orthopnea is a late sign of left heart failure.

Among the early signs of right heart failure are gaseous distention of the abdomen, engorgement of the neck veins, and enlargement of the liver. Later there is engorgement of veins of the peripheral circulation, with elevation of venous pressure and dependent bilateral edema and, when severe, hydroperitoneum.

Rest and Diet

While the treatment of congestive heart failure depends to a certain extent on the etiology of the heart disease and on the pathologic lesions that are present, there are certain forms of therapy that must be used in all cases.

The most important of these is *rest* and the avoidance of any effort that causes or aggravates the symptoms. Physical and mental rest also enables the heart to get some rest and so to accumulate some reserve strength. If there is no flutter, fibrillation, or paroxysmal tachycardia, it causes a slowing

of the heart rate. Rest in bed also lowers the venous pressure in the extremities and so prevents the formation of dependent edema and promotes diuresis, if there is generalized anasarca.

The *diet* of patients with congestive heart failure should be of a caloric value that will cause a reduction in weight of about two pounds a week. This, of course, means an *actual* weight loss and not merely a loss of edema fluid. While low in caloric value, it should contain adequate amounts of the essential minerals and enough proteins to maintain nitrogenous equilibrium and replace those lost in the urine if, as is usually the case in right or combined heart failure, albuminuria is present.

As it is now known that *thiamin deficiency* may cause cardiac failure and generalized edema, and as other vitamins are also essential to the normal cellular chemistry of the myocardium, the diet should be high in its vitamin content. Many patients who have organic heart disease and develop signs of congestive heart failure have been on diets more or less deficient in many of the essential elements. Improvement will not be nearly so rapid if a diet is prescribed that is in any way deficient.

For many years it has been customary to markedly limit the intake of liquids in patients with congestive heart failure. It has been gratifying to find that this procedure has been shown to be of little value in the elimination of edema fluids. The limitation of fluid intake often is most distressing to the patients and I have noted that they get along just as well if permitted to drink as much as they want. This does not mean that fluids should be pushed or that they should be administered intravenously in any quantities, as such procedures only increase the strain on the heart. It should be remembered that tea and coffee both contain diuretic drugs and so should be permitted, unless they cause too much restlessness or sleeplessness.

Digitalis

Digitalis is traditionally the drug of choice in the treatment of congestive heart failure, especially in cases due to rheumatic mitral heart disease, with or without arhythmia. It is of especial value in the treatment of patients with auricular fibrillation, as it causes the ventricles to beat less rapidly and so more effectively. It accomplishes the same purpose in those with auricular flutter and occasionally causes either of these forms of disordered heart action to revert to normal. In physiologic doses it will lessen the frequency of premature systoles, though in larger doses it may cause them to appear.

The glucocides of the digitalis series are of less value in the treatment of coronary heart disease with congestive failure and normal sinus rhythm, and must be used with greatest care in the treatment of patients with aortic insufficiency, whether due to rheumatic, syphilitic, or atherosclerotic disease of the valves.

Drugs of this group are excellent diuretics and probably act chiefly by their effect on the cardiac rate and rhythm, but also by their action in improving myocardial tone and efficiency. The standardized powdered leaf, in tablets or capsules, has almost superceded the tincture, formerly so popular, and the infusion, so much used by the physicians of the past century. It makes little difference which of the standardized preparations is used, as long as the physician understands the effects and dangers inherent in the particular preparation. Oral administration is the method of choice in patients who are not nauseated and vomiting due to some other disorder, and these drugs should be given subcutaneously or intravenously only in emergencies.

I have found that the administration of the standardized powdered leaf of digitalis, in 0.09 Gm. doses three times on the first day, twice on the second, and thereafter once daily or once a day six days a week, produces sufficiently rapid digitalization. This method of administration also reduces the likelihood of the development of toxic symptoms from the cumulative effects of the drug.

Diuretics

The *xanthine diuretics* have been found of greatest value in the treatment of congestive heart failure in coronary heart disease and in other types in which there was a normal rhythm. These drugs increase coronary flow and myocardial efficiency, and also increase glomerular filtration and so cause diuresis. Theophyllin with ethylinediamine may be administered by mouth or intravenously. It causes less gastric distress than most of the other xanthine preparations and is one of the most effective of them. In marked congestive heart failure, it should be given in doses of 0.18 Gm., three or four times daily, preferably in enteric-coated tablets.

The *mercurial diuretics* are of unquestioned value, but must be used with great care because of their great toxicity, and only when the other methods outlined have failed to produce the desired results. They are hydroscopic drugs, which attract the fluid from the tissues and prevent their resorbtion by the renal tubules. *They do not increase cardiac efficiency.*

Withdrawal of fluid from the chest and abdominal cavities by paracentesis often so relieves the circulation that it causes a dramatic improvement. Venesection may have a similar effect in cases of acute or paroxysmal pulmonary congestion. Drainage of edema fluid by incisions in the legs is rarely necessary, but sometimes causes great relief when the diuretic drugs are not effective. Weighing of the patient gives a more accurate picture of water loss than does measuring the output.

Sedatives

As rest, both mental and physical, is essential in the treatment of all cases of congestive heart failure, consideration must be given to the use of the various *hypnotic drugs*. This is especially true when the xanthine diuretics are being administered, as they cause more or less cerebral stimulation. Morphine, codeine, and some of the other opiates have always been extensively used in the treatment of heart failure, even when there is no pain, but they must be used with care, because of their depressing effect on respiration.

At present, the *barbiturates* are the most popular hypnotics, but they may be habit-forming and may have toxic effects. During the past year or two, many of the leading cardiologists have been advocating *hydrated chloral* as the hypnotic of choice. The bromides are also of value.

One other remedy of great value in the treatment of acute left congestive heart failure, especailly of that form resulting from acute cardiac infarction, is *oxygen*, given by nasal catheter. Despite the discomfort inherent in this method of administration, it gives more satisfactory results than when administered with a tent or a face mask. It is often life-saving in such cases.

To be most effective, the treatment of congestive heart failure must be *individualized* to fit the particular case.

700 N. Michigan Ave.

Roentgenography in Congestive Heart Failure

By N. S. ZEITLIN, M.D., *Chicago, Ill.*
Roentgenologist, Chicago Municip. Tuberc. Disp.

AN ACCURATE diagnosis of the size, shape, and contours of the heart, and a survey of the condition of the lung fields are very important to the clinician in the proper treatment of congestive heart failure. The roentgenologist is prepared to be of considerable service in determining just these conditions. Of course, it must be remembered that the x-ray findings will vary considerably with the degree of failure and the presence or absence of complications. A summary of conditions which are most frequently found will include the following:

1. The patient may be up and about, complaining only of moderate dyspnea, and still the x-ray film may show pleural fluid, usually on the right side. Occasionally this fluid is encysted, resembilng interlobar empyema.

2. The shape of the heart is of some importance and will frequently indicate the type of lesion causing the heart failure. In this way rheumatic disease can frequently be differentiated from a syphilitic heart, or straight coronary disease.

When the patient is in the hospital and bedridden, with obvious symptoms of decompensation, the roentgram may help considerably in determining the course of treatment. For example:

1. The film of the chest, taken in the partial upright position, with a portable apparatus, will show the presence and amount of pleural fluid and will help to determine if thoracentesis is necessary for the relief of dyspnea. In this connection it must be remembered that such films can now be taken with improved machines, so that they are highly diagnostic, even though the patient is in poor condition.

2. The size and shape of the heart can be studied, and the presence of pericardial fluid of any appreciable amount determined. Such information will help the clinician in his decision for or against pericardial puncture.

3. Frequently such patients will develop fever, and the question of terminal pneumonia has to be considered. Here, the x-ray study is a considerable aid in determining the presence of this dangerous complication.

Postoperative conditions of the heart are frequently of extreme importance to the surgeon. The modern use of transfusions and subcutaneous fluid administration, during the operation and immediately after, have put a considerable strain on the heart because of the increased blood volume. Such patients become dyspneic and exhibit symptoms of decompensation. An x-ray film, in these cases, will reveal the marked edema of the lungs and will influence the surgeon to stop all unnecessary fluids in the treatment of the symptoms.

Râles in the bases of the lungs in the postoperative patient, in most cases will be properly differentiated by portable-apparatus films of the chest. Here the differential diagnosis between atelectasis, post-operative pneumonia, and cardiac decompensation can frequently be made only with the aid of such a film of the chest.

It must be remembered, however, that the x-ray findings, in all of the conditions just mentioned, must be taken into consideration with the clinical findings. *They do not supplant the clinical examination*, which is of utmost importance.

A note of warning must be given in the care of all heart disease. It is urged that the patient shall not be moved for any x-ray work, since portable machines are now adequate. This warning is particularly important in coronary attacks. In this disease, the x-ray findings are of major importance at the onset and portable-apparatus films should be taken only after the acute attack is under control.

55 E. Washington St.

Waning Heart Reserve

In practically all cases of congestive heart failure, except the acute cases where death occurs in a few minutes, hours, or days, the actual failure is preceded for a considerable time by *symptoms* indicating a general waning of the cardiac reserve (myocardosis), even when there are few or no signs.

These symptoms, which always indicate a careful study of the cases, are *dyspnea* and *palpitation*.

Dyspnea means *breathlessness under circumstances that have not previously caused it*, and the patient often miscalls it "fatigue," so that careful questioning is necessary to discover it.

Palpitation means little in young or unstable individuals but in a middle-aged patient, who has not had such trouble previously, it is decidedly significant and calls for investigation.

A carefully taken *family history* may disclose the *hereditary factor* that is often present in heart cases and may help in making a diagnosis.

Early *sign* of *impending* heart failure are (1) reduced *pulse pressure* (a fall in the systolic, but with the diastolic unchanged); (2) the appearance of new *bruits* or changes in old ones; and (3) *transient arrhythmias*, occurring for the first time in middle age.

When these symptoms and signs appear, the patient should be put at rest immediately, and treated as a case of early or potential congestive heart failure.—JOHN R. H. TOWERS, M.D., in *Practitioner* (Lond.), Dec., 1941.

Plenty of Work

There never has been a lack of work in this country, though there has been a tragic dearth of certain kinds of jobs. This means that millions of men have been set free to create new work; to elevate their own standards of living; to make work for others. Work is where you make it.—RUTH G. K. STRAWBRIDGE, in *Think*.

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The Family Doctor

I am still unconvinced that the family doctor is an anachronism. I still want somebody to save me from unsuitable or excessive specialist advice; I need someone to co-ordinate the findings of specialists and discount them if necessary; and above all I want someone who is willing to talk to me, at length, about my migraine, my little boy's delinquencies, my wife's recent strangeness, my baby's inoculation, and my daughter's desire to marry a man with asthma.—"ONLOOKER," Lancet.

THE SEMINAR

Readers are invited to submit problems to the Seminar and take part in the discussions, which should reach this office by the 10th of the month following the appearance of the problem. Send problems and discussions to THE SEMINAR, CLINICAL MEDICINE, Waukegan, Ill.

Problem No. 8 (Medico-Surgical)

Presented by W. B. Palmer, M.D.
Furman, Ala.

RECAPITULATION: A girl of 2½ years was brought in many miles, suffering from malnutrition, pyelitis, and generalized furunculosis caused by *Staph. aureus*, and complaining of pains in the head and stomach. I prescribed a diet and general and local treatment, and in one week she was much better except for one large boil over the right eyebrow.

It was hard for the father to get to me, so I told him to take the child to a good man nearer his home. This was delayed for some days, when the doctor incised the abscess, passed a probe to the bottom, which he said was in the frontal sinus, and told the parents to bring her back in a few days, but again they delayed.

At the second visit, the incision was reopened, a sequestrum removed, and the child sent home, where she soon died, in convulsions, six weeks after I first saw her.

Requirements; Explain the cause of death and the source of the pains. What further treatment might have been helpful?

Discussion by
Dr. H. F. Proudlock
Menominee, Wis.

More data would be necessary to arrive at a conclusive diagnosis. In consideration of the data given, I will tentatively make a diagnosis of: *Metastatic brain abcess*, with *osteomyelitic changes* in the region of the superciliary process; *pyemia*.

The additional information that I would desire is: A roentgram of the frontal sinus, to determine the bony destruction caused by the abcess; a Schilling differential count, to determine the severity of the infection, and repeated to check the treatment with the count and shift; hospitalization, to note the progress of the patient and take emergency measures necessary as complications arise.

Treatment which might have been instituted: Radical surgery of the frontal sinus; insufflation of sulfanilamide powder in the wound; and internal medication with sulfanilamide.

Discussion by
L. E. Williams, M.D.
Kansas City, Mo.

Perhaps not much more could have been done in this case without better cooperation on the part of the parents. However, keeping the wound open until drainage ceased, and the administration of sulfathiazole might have been of some value.

The patient was undernourished, and had pyelitis, furunculosis, and frontal sinusitis with bone necrosis. The stomach pains may have been due to pyelonephritis, enlarged spleen, or perisplenitis. The headache could have been due to the frontal sinusitis, bone necrosis, anemia, or inflammation of or pressure on the supra-orbital nerve, and general toxemia. The leg pain may have been rheumatic or toxemic.

As the removal of necrotic bone was soon followed by convulsions and death, the cause of death was probably *sinus thrombosis* with *meningitis*, or *cerebral embolism*. It is also possible that the convulsions were uremic. If so, death would very likely be due to pyelonephritis and uremia.

Discussion by
R. L. Gorrell, M.D.
Clarion, Iowa

To avoid overlooking any "leads," I am analyzing each fact that is given.

Clinical informaiton	*Significance*
Pertussis	"Death has occurred following subdural hemorrhage. Convulsions are not infrequent in pertussis." (Osler: "Practice of Medicine," 13th edition, p. 161)
Pyelitis	Should this diagnosis be pyuria?
Staphylococcus aureus	"The *Staphylococcus aureus* is the most virulent of the staphylococci . . . The boil is almost always a staphylococcal infection." (Kolmer: "Clinical Immunology")
Supraciliary "furuncle"	Might represent the extension of a frontal sinus infection through the frontal bone and formation of an abscess, and osteomyelitis.
Incision and drainage; later, removal of a sequestrum	Evidently *osteomyelitis of the frontal bone* was present, either due to an undiagnosed frontal sinusitis, metastatic staphylococcal infection, or local extension of a boil.
Convulsions and death	*Abscess of the brain* most likely cause, as frequently associated with frontal osteomyelitis.

The most probable diagnosis: frontal bone osteomyelitis, frontal sinusitis, brain abscess. The head pains could be explained on a basis of sinus infection and osteomyelitis.

The abdominal pains cannot be diagnosed without more information, although one could hazard a guess as to abscess of the kidney or perinephritic abscess.

Treatment: In 1934, these methods were available: (1) "Staphylococcus vaccines are of value in treatment of furunculosis and some pyodermias, but have given disappointing results in the treatment of chronic sinusitis, otitis media, and osteoperiostitis";* and (2) foreign protein therapy, with intramuscular injections of sterile milk and intravenous injections of typhoid vaccine. Kolmer writes, "Sharp reactions have been highly beneficial in certain cases of furunculosis, pyodermia, and septicemia."

Today, the best procedure might be the use of sulfathiazole, with the addition of staphylococcal antitoxin if needed. Kolmer advises that one of these drugs be given for a day or two before operating upon or draining a staphylococcal infection, to prevent infection of new sites.

Solution by Dr. Palmer

Sir Frederick Treves, Dr. Walton Martin, and others have shown that the dangerous area of the face is enclosed in a triangle, one angle of which is at the bridge of the nose, and the others at each corner of the mouth. In this area the veins are valveless and the character of the tissues and their constant movement favor the spread of infection.

The area here under discussion is outside of that zone, but similar conditions prevail. We must consider cavernous sinus thrombosis, resulting from phlebitis of the ophthalmic vein; also destruction of a small part of the frontal bone by osteomyelitis, in which case the infection may have reached the epidural space directly or may have passed to the frontal sinus. When it reached the frontal sinus, it could have produced osteomyelitis of the inner wall, with the formation of an epidural abscess. If this was true, the abscess was not localized, but passed through the dura, causing abscess of the frontal lobe. Meningitis could have resulted in this way, or it could have been associated with cavernous sinus thrombosis.

As there were no early signs of venous obstruction in the conjunctiva or retina, and no paresis of the third, fourth, and sixth nerves, the diagnosis of cavernous sinus thrombosis was eliminated. A consideration of a frontal sinus involvement was discarded, since the frontal sinus is absent at birth and is seldom evident before the seventh year, reaching maturity about the twentieth year, so the infection must have been a direct extension through the bone to the meninges.

The pain in the head is understandable, but the pain "in the stomach" could have been relayed by the sympathetic system or it could have been caused by the pyelitis.

*Kolmer's "Clinical Immunology," W. B. Saunders Co., 1934, p. 349.

There are no fixed rules for the treatment of such cases. It is a cardinal principle of surgery to let the pus out, either by the knife or in a roundabout way, if the soft tissues are involved, as in furuncles, especially about the face. In this patient the infection was in the bone, so it was not so easily drained by the "let-alone policy." In such cases it is left to the judgment of the surgeon, who must decide when to operate or let alone. Probably early operation would have been unsuccessful in this case. At present, we give tremendous doses of sulfathiazole, or perhaps sulfapyridine if there is meningitis, since it seems to penetrate diseased meninges better.

A few years after the death of this child the father came to see me, and again I made a blood test, which showed a four-plus Wasserman reaction. Syphilis was acquired long before the birth of this child. Several negative tests do not eliminate the possibility of syphilis, and one positive does not prove its presence, in the absence of confirmatory symptoms. One or two provocative doses of neoarsphenamine, mercury, or bismuth salicylate will generally change a negative into a positive Wassermann reaction, if syphilis is present. Prenatal infection may or may not have been a factor in this case.

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Problem No. 10 (Medical)

Presented by Ralph L. Gorrell, M.D.
Clarion, Iowa

Mrs. E. B., age 28, came to the office July 15, 1939, complaining of nervousness, tachycardia, palpitation, weakness, and several "funny" spells.

Previous history: She had tonsillitis frequently, until tonsillectomy was performed, at the age of 18; smallpox as a child (without complications); uncomplicated appendectomy 11 years ago, for acute appendicitis.

She had always felt well until two years ago, when she had a clavicle fracture in a runaway accident. Since that time, she has been a little nervous. The previous spring she felt very weak after paperhanging. When I first saw her, she tired rapidly with due cause.

Tachycardia and palpitation were the chief symptoms complained of.

Examination: The patient was a thin, sallow woman, who appeared nervous. Her pulse was 108; temperature, 99.4° F.; respirations, 21; blood pressure, 160/98 at the first examination. Her skin was warm and slightly moist; her pupils reacted to light; her teeth and throat were negative; no thyroid was palpable; there were a few "rheumatic" (fibrositic) nodules in the neck muscles. The heart, lungs, and abdomen were negative, and the vaginal examination was also negative, except for a mild cervicitis.

Laboratory: Her urine was normal; hemoglobin, 65 percent; red blood cell count, 4,200,000; tuberculin test, two plus positive; the brucellergin (undulant fever) test gave a very marked reaction; her sputum was negative for tubercle bacilli.

Follow-up: Her pulse rate continued at 100, and her temperature varied from 99.5 to 99.8° F. She felt that she could not afford a chest x-ray study or a basal metabolism test. Her menstrual periods, formerly heavy, had become scant and of short duration. A few hot flashes were noted. She had lost some 20 pounds of weight.

Requirements: State your diagnosis and describe in detail, how you would have handled this patient.

The Surgeon

A surgeon should be youthful, or at any rate nearer youth than age, with a strong and steady hand, which never starts to tremble; prompt no less with the left than with the right hand; with vision sharp and clear, a spirit undaunted; pitiful, but so as to wish to cure the patient whom he undertakes, yet not moved by his clamour: neither hastening more than is desirable nor cutting less than necessary, but all the time doing everything as if no emotion was being excited by the patient's cries.—CELSUS (C. 10 B.C.)

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Unused Powers

Compared with what we ought to be, we are only half awake. We are making use of only a small part of our physical and mental resources. Stating the thing broadly, the human individual thus lives far within his limits. He possesses powers of various sorts which he habitually fails to use.—PROF. WILLIAM JAMES, M.D.

CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

Uterine Bleeding: A Symposium*

The common causes of *obstetric hemorrhage*, arranged in the order of their frequency, are: (1) Postpartum hemorrhage; (2) abortion; (3) placenta previa; (4) ectopic pregnancy; (5) premature separation of the normally implanted placenta; and (6) rupture of the uterus.

Forty (40) percent of maternal deaths are due to puerperal infection; 20 percent to toxemia; and 18 percent to hemorrhage, but *hemorrhage predisposes to puerperal infection and to shock* and many of the procedures employed in the treatment of hemorrhage, such as manual removal of the placenta and uterine tamponade, introduce infection, inflict shock, and often require anesthesia.

Treatment of Postpartum Hemorrhage

Bimanual compression of the uterus is a simple, effective means of controlling uterine hemorrhage. *Technic*: One hand is inserted into the vagina, closed into a fist, with the back of the hand directed posteriorly and the knuckles in the anterior vaginal fornix; the other hand is placed on the abdomen, resting on the posterior surface of the uterus; and pressure is made on the anteverted uterus between the two hands. This method is quicker than uterine tamponade, more effective, and is much less likely to introduce infection.

Placenta previa is treated by (1) liberal use of blood transfusions; (2) rectal examinations are not used, as they are dangerous and inconclusive; sterile vaginal examinations are carried out only after the operating room is set up for any type of treatment, including cesarean section; (3) all cases of central and partial placenta previa in primipiaras, in uninfected cases, are treated by cesarean section; (4) marginal placenta, in a multipara, is treated by rupture of the membranes.

Abortion Hemorrhage

In non-infected abortions or miscarriages, the uterus should be cleaned out with a large, moderately sharp curette. In the presence of infection, intra-uterine manipulation is avoided and these procedures are carried out: (1) Posterior pituitary extract is given to cause expulsion of the uterine contents; (2) a sterile speculum is inserted and any products of conception in the vagina and cervix are removed with sponge forceps; (3) if these measures fail, gauze is packed into the uterus and vagina, and removed in 12 hours, when the fetal tissue and membranes are separated and can be readily removed from the vagina or uterus.

Rupture of the uterus can occur without dramatic symptoms. In one case, bleeding and shock followed the spontaneous delivery of a large baby. The diagnosis was postpartum hemorrhage, until necropsy showed an extensive rupture. In two cases of uterine rupture, there was neither shock nor definite abdominal tenderness.

Premature separation of the pacenta: If the patient is in labor, deliver vaginally, with the help of artificial rupture of the membranes and an abdominal binder. If not in labor, a cesarean section is done *while a blood transfusion is running.*

Blood transfusions are our best method of treatment of obstetric hemorrhage.

Gynecologic Genital Bleeding

A severe hemorrhage may be functional, and mild intermenstrual bleeding may result from a carcinoma, so the amount of the flow has no relationship to the cause.

*Southern M. J., April, 1941.

Age of the patient: In the teens, bleeding is almost always functional; in the twenties, it is chiefly caused by pregnancy, endocrine changes, and pelvic inflammatory disease; in the thirties, fibroids and cancer are more frequent causes of bleeding than infections and functional (endocrine) changes; in the forties, functional bleeding is frequent and cancer becomes more common; in the fifties, bleeding is usually the result of cancer.

Menopausal bleeding: At the menopause, the withdrawal of the estrogenic hormone results in a thin vaginal mucosa, which easily becomes ulcerated superficially, and vaginitis follows the invasion by the vaginal flora.

A discharge of old, brown blood may signify *stenosis of the cervix*, which can be diagnosed and treated by the use of a sterile uterine probe.

A cervix that feels normal and appears normal through the speculum may harbor an endocervical cracinoma, which can be diagnosed only by curettage of the cervical canal.

Bleeding from a myomatous (fibroid) uterus may be due to malignant degeneration of the fibroid.

Endocrinopathic Bleeding

Treatment: If the patient is in the menopausal age, a thorough pelvic examination is carried out, followed by diagnostic curettage and a microscopic examination. If the latter reveals an endometrium of proliferative or hyperplastic type, or one corresponding to any of the normal menstrual phases, the bleeding is functional in origin. One of three methods then may be used: (1) Intrauterine insertion of radium; (2) deep x-ray therapy to the pelvis, ovaries, and uterus; or (3) if there is any other reason for opening the abdomen, a simple removal of the uterus is done.

In young patients, curettage is not usually needed. If a simple pelvic examination reveals the essential normality of the pelvic organs, the bleeding is probably functional. If bleeding is severe, a curettage rarely fails to check it temporarily. A transfusion should precede it, if the bleeding has been alarming. Radiotherapy should not be used on younger women.

Hormonotherapy: From 200 to 500 units of pregnancy-urine or chorionic hormones (such as Antuitrin-S or A.P.L.) are injected daily with the onset of the bleeding, and continued until the bleeding is controlled or 6 or 8 injections have been given. Testosterone should be given in 25 mg. doses twice weekly, or 10 mg. thrice weekly, in less severe cases. Thyroid extract is occasionally successful.

N. J. EASTMAN, M.D.
R. W. TELINDE, M.D.
EMIL NOVAK, M.D.
Baltimore, Md.

Office Curettage

The small suction curette, attached to an ordinary syringe, may be used in the office as a means of obtaining specimens for diagnosis, if the patient is under 35 years of age, but malignant disease cannot be ruled out with this method. Women with functional bleeding may be treated by using the suction curette repeatedly, over a period of months.—R. W. TELINDE, M. D., in *South. Med. J.*, April, 1941.

◆

Ether Anesthetic for Long Operations

If a patient is anesthetized completely (a deep "surgical anesthesia"), and the ether given for 15 to 20 minutes thereafter, no more ether need be given for at least 1 hour or more and the operation may proceed until the patient definitely complains of pain. Analgesia is marked, so that the patient may not be able to feel pain and yet be conscious enough to carry on an intelligent conversation.

Such patients are either awake when they reach their rooms or waken shortly thereafter. They are not toxic and feel fine on awakening. They have little nausea and little or no shock. Postoperative complications are rare.—J. A. DANNA, M.D., in *New Orleans Med. & Surg. J.*, Sept., 1942.

◆

Progesterone in Chronic Cystic Mastitis

Patients with mammary dysplasia show a deficiency of corpus luteum secretion.

Twenty-seven (27) patients with chronic cystic mastitis (mastodynia, adenosis, and cystic disease) were given 5 mg. injections of progesterone twice weekly for the last two weeks of one or two consecutive menstrual periods, and relief of symptoms, in cases of mastodynia and adenosis, lasting from 12 to 18 months, occurred in most cases. The value of this treatment in cystic disease

is doubtful, but it might prevent recurrence following surgery or aspiration. —C. F. GESCHICKTER, M.D., in *J. Clin. Endocrinol.*, I; 1937, 1941.

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Look for THE LEISURE HOUR among the advertising pages at the back.

◆

Ingrown Toenail

The first stage of ingrown toenail can be treated conservatively. The important point is the projecting edge of the nail, buried in the soft tissues at the side or sides of the toe. When this buried edge is removed, relief is prompt.

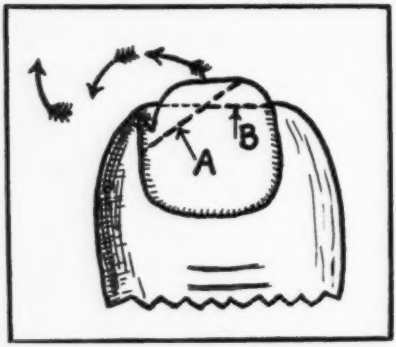

Fig. 1: Diagram of "slant" technic (Marshall). A — primary incision; B — secondary incision.

Any dirt under the projecting edge of the nail is removed with a nail file; a "slant" cut is made completely through the nail, with sharp manicure scissors or clippers, so that the lowest point is *below* the ingrown portion of the nail (see A, Fig. 1); the cut part of the nail is lifted, with the fingers, toward the ingrown part and twisted as shown by the arrows, thus removing it *en masse*, with practically no pain to the patient. The projecting point of the free edge may be cut across (B), to prevent tearing the stocking. No local anesthetic is needed.

The fossa remaining is carefully probed, to see if any bits of nail remain (if so, they should be removed); macerated tissue should be cleared out; the entire area is cleansed with soap and water; and tincture of Metaphen or Merthiolate is applied freely to the fossa. No dressing is required, unless infection was present before operation. The patient should return for observation as seems necessary. — WALLACE MARSHALL, M.D., in *Tri-State M. J.*, Aug., 1942.

Diagnosis and Treatment of Curable Types of Heart Disease

Some patients, with congestive failure which does not respond to digitalization, should be studied for hypothyroidism or goiter.

Hypothyroidism should be suspected if the skin is dry, if the patient notices cold readily, if paresthesias of the extremities are complained of, if the speech and mental processes are slow. The heart is enlarged; the sounds muffled, often with a systolic apical murmur; the pulse is slow; and the blood pressure low. The administration of thyroid extract causes a decrease in heart size.

The *goiter type of heart* may show little evidence of hyperthyroidism. Extrasystoles and other irregularities of the pulse are frequent.

Beriberi heart (due to vitamin B_1 deficiency) can be diagnosed on the patient's diet history (no whole-wheat foods; all refined foods). Weakness, anorexia, palpitation, tachycardia, and neuritis are common symptoms. Give from 15 to 30 mg. of thiamine, parenterally three times daily, and the enlarged heart will return to normal.

Fatal contusion of the heart may occur without apparent evidence of trauma. As the blood collects in the non-elastic pericardial sac, the heart sounds become very quiet, the blood pressure falls, and there may be a demonstrable increase in area of cardiac dullness. A paradoxical pulse may be present. The blood should be aspirated at once and exploration carried out.—W. J. LACKEY, M. D., in *South, Med. & Surg.*, Sept., 1942.

◆

The Rh Factor in Repeated Stillbirths or Miscarriages

The Rh factor, recently discovered by Landsteiner and Wiener, appears to be an important consideration in many stillbirths and miscarriages, through isoimmunization of the mother with the fetal blood.

Most hemolytic reactions in the literature have been observed in transfusions into pregnant women. This is undoubtedly due to the fact that these women were Rh-negative persons married to Rh-positive husbands, and their husbands have served as blood donors. It is obvious, therefore, that in all pregnant patients, no transfusion should be carried out until an estimate of the Rh characteristics of these patients has been determined. Only Rh-negative blood

may be permitted in these cases. The ideal donor should belong to the O group, and be Rh-negative as well. Hospitals should carefully group their lists of blood donors and have at hand several ORh-negative donors, to be used in Rh-negative pregnant women requiring blood transfusions; these donors should be used in all persons requiring more than one transfusion — R. B. H. GRADWOHL, M. D., in *Gradwohl Lab. Digest*, July, 1942.

◆

Treatment of Undulant Fever

One new method of treatment which is giving very promising results in brucellosis is the use of blood from individuals who have received undulant fever vaccine. Young people immunized against undulant fever yield blood of a high titer, and the administration of their blood often gives dramatic results, both in the acute, severe cases and the slow, subclinical types.

The person who receives the immunizing doses is not disturbed by the vaccine injections (a member of the family may be used) and is immune to the disease for a long time.

Fever therapy is very effective, when given properly to individuals who are not debilitated. One treatment may be enough to cure the disease.

There is much debate about the efficacy of the various commercial vaccines.—*South. Med. & Surg.*, Aug., 1942.

◆

Delivery With a Stem Pessary in Place

A woman who had had six children, had a gold-plated, "wish-bone" type of stem pessary introduced into her cervix by a physician in January, 1937, for contraceptive purposes. This was left in place for a year, and when it was removed for cleansing, she promptly became pregnant and delivered her seventh baby in October, 1939.

The pessary was re-introduced in January, 1940, but in July, when she reported to her physician for its removal and cleansing, she was found to be three weeks pregnant. Attempts at removing the pessary were unsuccessful and caused considerable bleeding, which continued for two weeks.

As she did not want to lose the pregnancy, nothing more was done, and she carried her baby until January 23, 1941, when she began to labor and was put in a hospital for delivery.

On admission there was purulent, foul-smelling discharge from the vagina and the button of the pessary was protruding from the os.

Delivery of a seven-month fetus, weighing two pounds six ounces, was spontaneous. The pessary was lightly imbedded in the fetal scalp, but was easily removed, leaving no permanent injury. The infant was placed in an incubator, and after sixty days was discharged in good condition, weighing six pounds three ounces. At the end of six weeks, the mother was in good general condition.—DRS. T. S. WELTON and OREN ELLINGSON, in *A. J. Surg.*, Nov., 1941.

The disadvantages and dangers of the stem pessary have long been recognized, and since it is proved not to be wholly reliable as a contraceptive (there are other reports similar to this), there seems to be no valid reason for its use. —ED.

◆

X-Ray Studies of the Fetus

Roentgrams of the fetus should always be made before a cesarean section, to rule out such deformities as anencephalus, microcephalus, hydrocephalus, extensive spina bifida occulta, intrauterine fetal rickets, and achondroplasia. Syphilis and fractures may also be identified on the film.

A blurred image, on the film, of some part of the fetus indicates that it is alive and moving. The signs of fetal death are: (1) overlapping of the skull bones; (2) lordosis of the caudal half of the fetal spine or angulation of the spine; (3) faint visualization; and (4) disproportion between the size of the fetus and the duration of the pregnancy.

A lateral film will disclose pregnancy as early as the eighteenth week.—H. V. HARTZELL, M.D., in *West J. Surg., Ob. and Gyn.*, June, 1942.

◆

Predicting Dystocia

A woman with the android type of pelvis may be expected to have a difficult labor. This type of pelvis may be suspected if the patient has a square torso, broad shoulders and hips, with a thick waistline; if she tends to obesity; if her features are coarse; if the thickness of the thighs does not stop at the knees, but continues into the lower legs, ankles and feet. Posterior positions are common in android pelves, and transverse arrest of the head is prone to occur, particularly if there is a convergence of the side walls of the pelvis,

with a narrow outlet. Forceps are difficult to apply, in case of arrest. Internal version and breech extractions are especially dangerous in android types, for the aftercoming head may fix in the oblique diameters. The android pelvis may be positively diagnosed by roentgrams. —H. V. HARTZELL, M.D., in *West J. Surg., Obst. and Gyn.*, June, 1942.

◆

The products we advertise are worthy of your attention. Look them over.

◆

Mild Tincture of Iodine

The fact, that the Pharmacopeia recognized a "mild tincture of iodine" in 1936, seems to have been overlooked. This 2-percent preparation is superior to the official (7-percent) tincture for all types of *"first-aid" work*, as it is less irritating and the sodium salt used is more physiologic than the potassium used in Lugol's solution.

The formula is: Iodine, 20 Gm; sodium iodide, 24 Gm.; diluted alcohol (equal parts of alcohol and water), to make 1000 cc. Or the following formula may be used for a smaller quantity: Iodine, 146 grains; sodium iodide, 175 grains; diluted alcohol, q.s. ad 1 pint. Every pharmacist should be able to make this product.

◆

Atropine in Parkinsonism

Two-thirds of the patients suffering from the rigidity and tremor of the Parkinsonian syndrome are improved by the use of moderate doses of atropine orally.

Dosage: Atropine is prescribed in ½ percent solution; thus each drop (minim) contains 1/200 grain (0.32 mg.) of atropine; 5 drops contain 1/40 grain (1.6 mg.). Every patient should be provided with *written* specific instructions as to the number of drops to start with, the amount and frequency of increase of the dose, and the desired time interval between doses.

The patient in poor condition is started with 1 drop, the average patient with 2 drops, and the robust patient with 3 drops, 3 times daily. A *standardized dropper* should be used, which measures one minim to each drop of solution.

The dose is increased 1 drop for each dose, at intervals of 3 days, until 6-drop doses are used; very gradual increases are then made until 10 drops, three times daily, are being taken. (Ten drops contain 1/20 grain (3.2 mg.) of atropine and taken three times daily total about 1/7 grain for the day. The average patient needs only 5 to 10 drops three times daily. In warm weather the dose must be reduced to about one-half.

The medicine should be taken at 8 a.m., 3 p.m., and 10 p.m., so that atropine will not accumulate in the body. If dryness of the mouth or blurring of vision occurs, doses may be reduced to twice daily. A full glass of water should be taken with each dose.

Results: The medicine is inexpensive, a month's supply costing only 50 cents, and the solution should be discarded at the end of the month. Sixty-five (65) percent of patients were improved; many could take regular work.

Reactions: Dryness of the mouth, blurred vision, nausea and vomiting, flushing of the face, sensation of warmth. —T. FORD, M.D., in *N.Y.S.J.M.*, June 1, 1942.

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Look for THE LEISURE HOUR among the advertising pages at the back.

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Prognosis of Coronary Occlusion

At present, about 33 percent of all patients with coronary occlusion die within a few weeks of the first attack (35 percent of women and 31 percent of men). In the fifth decade the percentage is 25; in the eighth decade, 50. If there are no significant electrocardiographic changes, the outlook is much better—only 5.5 percent die soon.

Hypertension, dyspnea, cyanosis, sweating, shock, a pericardial friction rub, fever above 103° F., a leukocyte count above 15,000, a pulse rate above 120, and signs of heart failure make the immediate prognosis decidedly more grave.

The severity of the pain and the occurrence of transitory arrhythmias seem to have no effect on the prognosis.

Out of 372 patients who survived the first attack, the average survival period of 101 who died was 41.1 months. Four (4) patients lived for more than 10 years after the initial attack. Of those in whom the cause of death was known, 35 percent died instantly; 40 percent, of a subsequent attack; 20 percent, of congestive heart failure; and 5 percent, of causes unrelated to the heart.

Of the survivors, 30 percent were able to perform practically full duties; 45 percent, partial duty; 22 percent, restricted duty; only 3 percent were completely incapacitated. Patients have lived as long as 25 years after the original attack of angina pectoris, but most of them die within five years.—SAMUEL A. LEVINE, M.D., in *Modern Concepts of Cardiovascular Dis.* May & June, 1942.

Râles

Signs are not directly diagnostic of particular diseases. All râles are moist râles, since they are caused by fluid or secretions in the lung. The sound is produced by the bursting of a bubble of fluid with a sudden click as the surface film ruptures. Secretions in a fine terminal bronchiole will produce a small bubble, and therefore a small râle. The size of the râle—fine, medium or coarse—will then depend upon the size of the lumen in which it is produced. The *crepitant râle is very fine*, and may be likened to the sound obtained by rolling a pinch of hair between the finger and thumb close behind the ear. It is produced in *terminal bronchioles*, and can occur in any condition in which fluid is present in the small bronchi—transudate from heart failure; inflammatory exudate from penumonia; consolidations, such as tuberculosis; lung abscess; pneumonia; pulmonary infarct; or, normally, in persons of advanced age. The crepitant râle is not pathognomic of any one disease entity.

Coarse râles, produced in the larger bronchi, occur in so many conditions that they are valueless in determining a diagnosis. *Musical râles* have a distinct, wheezy quality. Narrowing of the air passages, due to inflammatory swelling of the lining membrane and by secretions which gather along the sides of the tubes, are responsible for this sound. As the air rushes back and forth during respiration, the sticky secretions are made to vibrate like a reed in a horn. When the large bronchi are involved, there is a deep, groaning, sonorous sound; a high-pitched sound indicates narrowing of the finer bronchi, and is called a *sibilant râle*.

The râle is a sign, just as fever is a sign. Yet what internist would diagnose a specific condition solely on the basis of an elevated temperature? The râle is a valuable adjunct, but diagnoses are made of "sterner stuff." — SAM E. THOMPSON, M.D., in *Texas State J. Med.*, July, 1942.

✦

Precautions During Fluoroscopy

Excessive exposure during fluoroscopy may cause roentgen-ray burns of both the patient and the physician. These steps should be taken to prevent such injuries and prevent malpractice suits: (1) An aluminum filter of 1 or 2 mm. thickness should be used during fluoroscopy; (2) the field of vision should be kept as small as possible to see the essential part of the organ under observation; (3) during reduction of a fracture, turn off the fluoroscope during manipulations and use it only as a check, at intervals; and (4) before beginning fluoroscopy, stay in a dark room for from 10 to 20 minutes, or until the eyes are sufficiently accommodated to see well. *Never* attempt to see details better by increasing the amount of current and prolonging the examination time. — G. E. PFAHLER, M. D., in *Radiol.*, July 1942.

✦

Scabies: Diagnosis and Treatment

The rich and the poor have scabies; the baby and the aged person may have it.

Diagnosis: The primary lesion is a vesicle which early becomes a burrow. Burrows are difficult to find in adults. *Mounds on the shaft of the penis are strong presumptive evidence of scabies;* they are elongated, elevated, dull-red, and often cause great edema.

Breast-fed infants show primary lesions (vesicles) and scratch marks on their faces. Older children may be seen with secondary pustules on the palms and soles. *Vesicles or pustules on the breasts suggest scabies.*

Always inquire if other members of the family have complained of itching.

Treatment: A soap and warm water bath is taken and then the skin thoroughly dried. The medication must be applied to *every inch* of skin surface, from the chin to the ends of the toes.

For infants and young children, prescribe precipitated sulphur, ½ dram (2 Gm.), and zinc oxide powder ½ dram (2 Gm.) to the ounce of petrolatum, being careful to specify enough for six applications (night and morning for 3 days).

Rapid, ambulatory treatment: A lotion is used which consists of equal parts of soft soap, isopropyl or 75-percent alcohol, and benzyl benzoate, giving 150 cc. of lotion to each patient. The body is rubbed with soft soap, then soaked in a warm bath for 10 minutes. While still wet, the body is brushed all over with the lotion for five minutes, with a small brush. After drying, another 5 minute application is brushed on and allowed to dry. A general bath is given 24 hours later. No more treatment is needed. — J. W. BARR, M. D., in *South. Med. & Surg.*, Aug., 1942.

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I like CLINICAL MEDICINE tremendously, and it has helped me more than a hundred times the cost of my subscription.
—G.H.A., M.D., Iowa.

MEDICO-MILITARY NOTES

Tobacco and the Soldier

Eleven times as many cigarettes are being smoked today as at the beginning of World War No. 1; and soldiers smoke more than civilians, so tobacco is a real problem in the Army because some men seem to be "allergic to tobacco" and others react unfavorably to it in various ways.

It has never been conclusively proved that any reasonable amount of smoking (or even episodes of unreasonable amounts) has any serious or permanent effect upon normal, healthy men; nor that it is a *cause* of high blood pressure, neurocirculatory asthenia ("soldier's heart,") or organic heart disease (though when people *already have* these conditions, smoking may make them worse); or that it interferes with the mental or physical efficiency of normal, healthy people — often quite the reverse.

However, tobacco smoking affects different individuals (and even the same individual, at different times and under different conditions) very differently; and all suspected cases must be carefully studied in regard to these effects, so that intelligent advice can be given.

Nicotine is the only important potentially harmful element in tobacco smoke, and the precentage of this substance in cigarette smoke can be much reduced by using *mild tobacco*; by smoking in the *open air;* by smoking *slowly*, and with considerable intervals between cigarettes; and by throwing away the last ¼ to ½ of each cigarette, as a "stub."

Certain tests will show the men to whom tobacco may be harmful, and these, along with common sense and human understanding should be used by all who advise soldiers.—MAJ. C. WARD CRAMPTON, Med. Res., U. S. Army; In *Milit. Surg.*, July, 1941.

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Medical Administrative School Doubles Classes

The Medical Administrative Corps Officers Candidate School, at Camp Barkeley, Tex., will have classes twice the previous size at its sessions beginning September 26. This action has been taken to expedite the relief of medical officers from purely administrative and executive duties, so that their time and energy may be devoted to professional activities.

Blast Shock

In World War No. 1, we heard nothing about *blast shock*, though there were plenty of explosions of bombs and other things.

Early in this war we began to hear, from England, that blast shock was different from anything yet described. After a bombing, they found people dead in the streets, who showed no external sign of injury, and at autopsy they found, at first, nothing to explain the deaths. Later, with more careful study, they found fresh hemorrhages in the brain, lungs, and other important organs, including the *adrenals*.

Other patients were found with apparently insignificant lacerations of the soft parts. If these patients were operated upon, with spinal or other anesthesia, many of them died, apparently without reason. The explanation offered was that they had been suffering from mild or moderate blast shock, which had not been diagnosed.—WARREN H. COLE, M.D., F.A.C.S., in *Bul. No. Suburb. Br. Chicago Med. Soc.*, Aug., 1942.

[This recently-recognized type of war injury appears to offer an important field for study, as little seems to be known about it, so far.—ED.]

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Assignments and Grades

A sincere effort is being made by this office to place men in the same type of work for which they received training in their civilian medical practice. The papers of every officer appointed are examined carefully before assignments are made. Those individuals who have had special training in any field of medicine can best serve their country doing that work. We are hoping not to have ophthalmologists doing amputations of extremities. We do not wish to have general surgeons as chiefs of radiology departments. It will be impossible to classify every individual properly but at the present time the vast majority of men are being placed as their training indicates.

Do not write for information unless it is absolutely essential and of an emergency nature.

The action of the grading committee appointed in this office in determining the initial grade must be final.—Procurement & Assignment Service.

DIAGNOSTIC POINTERS

Fever in Congestive Heart Failure

• Although congestive failure alone may explain up to one degree of fever, four most common causes of fever during the cardiac failure are, in this order of frequency: (1) pulmonary infarction; (2) pulmonary infection; (3) active rheumatic fever; and (4) acute coronary thrombosis.—N. FLAXMAN, M.D., in *South. Med. & Surg.*, May, 1942.

Minor Pathologic Signs

• There has been a tendency, on the part of physicians, when they find a slight elevation of blood pressure, with only a very faint trace of albumin, sugar, or a few cells in the sediment of the urine, not to appreciate that these are nature's danger signals. One should not wait until these minor changes become paramount before instituting what therapy is available to prolong the life of a patient.—K. ANDERSON, M.D., in *Journal-Lancet*, Sept., 1942.

Edema in Pregnancy

• Pitting edema of the ankles is a common finding in late pregnancy, but if it extends up on the legs or is present in other parts of the body, *it is abnormal.* Many patients have *abnormal gains in weight*, which can be due only to retained water, long before they have any demonstrable edema.—W. J. DIECKMANN, M.D., in "Toxemias of Pregnancy" (C. V. Mosby Co.)

The Ponderal Index

• Overweight is always a serious handicap, especially to subjects of diabetes, heart disorders, and high blood pressure, and the *ponderal index* gives a simple method of recognizing this condition. The quotient of the weight, in pounds, divided by the height, in inches, gives the ponderal index. If it less than 2, the patient is underweight; if between 2 and 2.5, his weight is normal; if more than 2.5, he is overweight.—S. C. ROBINSON, M.D., in *J. Lab. & Clin. Med.*

Physical Findings in Brucellosis

• The great majority of patients with brucellosis (undulant fever) do not appear sick. They are fairly comfortable, mentally alert, and ready to talk. Pallor is frequent. The patients often appear tired. In the few patients who are extremely ill, the mentality is clear and there is no evidence of the dullness so characteristic of typhoid fever.

Abdominal tenderness is commonly found, usually in the right lower or upper quadrant. A firm, slightly enlarged spleen can be palpated in one-third of the cases. Scattered maculae, resembling rose spots, have been noted. There is no physical finding characteristic of brucellosis.

Probably no one thing should so influence a physician to consider *Brucella* infection in differential diagnosis as a fever unexplained by positive physical signs.—I. F. HUDDLESON, M.D., in "Brucellosis in Man and Animals" (The Commonwealth Fund, Publishers).

Pneumonia

• In the vast majority of cases of lobar pneumonia, the x-ray film will show diagnostic findings within from 12 to 18 hours after the onset, and often before conclusive physical signs are present. —*Miss. V. M. J.*, Sept., 1942.

Symptoms of Diabetes

• Easy fatiguability, *neuritic or neuralgic pains, itching, weakness*, increasing appetite or thirst, and premature cataract should lead to study for diabetes. Transient glycosuria after large meals should serve as a warning of a tendency to diabetes, and a low-carbohydrate diet should be prescribed.—D. R. DHAR, M. D., in *The Antiseptic* (Eng.), Feb., 1942.

Endocrine Functions

• Isolated determinations of glandular functions must be used with caution when diagnosing their cyclic and seasonal variations. A series of weekly tests for at least a month is necessary in making a seasonal diagnosis.—MICHAEL J. BENNETT, M.D., *et al.*, in *Southern Surg.*, Mar., 1941.

THUMBNAIL THERAPEUTICS

Thiamin in Heart Cases

• Since it is non-toxic, thiamine hydrochloride certainly should be administered in all heart cases. — A. EUSTIS, M.D., in *New Orleans M.&S.J.*, Feb., 1942.

Antipeol in Varicose Ulcers

• Ten (10) old, stubborn cases of varicose ulcer, where usual measures had failed, were treated with local applications of bacterial antigens (Antipeol). All were free of infection in a week; 3 were cured in less than a month; 7 (in which treatment seems to have been stopped too soon) were markedly improved.—DRS. L. J. BOYD and J. WEISSBERG, in *Med. Rec.*, Feb. 4, 1942.

Early Tonsillitis

• It is possible to abort, or alleviate, an early case of tonsillitis by (1) applying suction to the tonsils to empty the crypts; (2) painting the tonsils *only* with a 10- to 20-percent silver nitrate solution; and (3) frequent use of a mild antispetic solution in the nose. *Complete rest* should by ordered. — *E.E.N.T.M.*, Sept., 1942.

Sulfathiazole might well be given, in 15-grain doses three times daily.—R.L.G.

Painful Breasts in the Puerperium

• The sex hormones, either male or female, are effective in relieving "engorged breasts" during the puerperium. They have no effect on lactation. Either estrogenic substances (Theelin, Amniotin), including stilbestrol, or androgenic material may be given in doses of 10 mg., by mouth, for the second, third, and fourth postpartum days. Their use should not be long continued, as delay of regeneration of normal uterine mucosa might result.—R. RUTHERFORD, M.D., in *West. J. Surg., Ob. and Gyn.*, June, 1942.

Sulfathiazole in Gonorrhea

• One gram (15 gr.) of sulfathiazole should be given every 4 hours to the patient with gonorrhea. The average patient has no demonstrable gonorrheal infection in 6 days, and may be released in 11 days, after 3 negative urethral smears, two negative prostatic smears, and a provocative test by anterior urethral instillation of 1:20,000 mercury bichloride solution. If sulfathiazole is stopped at the first sign of decreased urine output, hematuria, kidney pain, anemia, or skin rash, it will cause no serious toxic effects.—M. A. MAGID, M. D., in *J.A.M.A.*, May 30, 1942.

Postoperiative Distention

• Abdominal distention or ileus occurring postoperatively may be treated by using a slow-drop enema consisting of two tablespoonfuls of sodium chloride in 150 cc. of lukewarm water. The enema may be effective before it has been completed; frequently after five minutes; and almost always within 15 minutes. It has no effect when a mechanical obstruction exists.—*Anes. & Anal.*, July-Aug., 1941.

Procaine in Acute, Painful Infections

• The infiltration of large amounts of a weak solution of procaine (½ or ¼ percent solution) into the tissue spaces around an inflammatory process stimulates the nervous system, as well as relieves the pain. Gonococcic epididymitis, cellulitis, carbuncle, thrombophlebitis, acute mastitis, osteomyelitis, and the acute edema of snake bites have been treated, with favorable results.—A. VISHNEVSKIY, M. D., in *Sovet. Med.*, Dec., 1941.

Dizziness Caused by Hypertension

• The injection, once or twice weekly, of histamine phosphate will relieve the vertigo caused by high blood pressure. The dose is 0.05 cc. of the 1:1,000 dilution, with an increase of 0.1 cc. each time until 0.5 cc. is reached.—W. MARSHALL, M.D., in *Northwest Med.*, Sept., 1942.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

I find that, although many of my friends are poor arithmeticians, they are nearly all good bookkeepers.—SIR WALTER SCOTT

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THE UNIVERSE THROUGH MEDICINE

McDonagh

THE UNIVERSE THROUGH MEDICINE. *By* J. E. R. McDONAGH, F.R.C.S. *London: William Heinemann, Ltd., 1940. Price, $7.50.*

This monumental work is, perhaps, the most important publication of this century up to now, especially as regards the art and science of medicine and its practitioners, and reveals its distinguished author as a philosopher of the first rank, as well as a leading contributor (possibly the greatest) to the *science* of medicine, as opposed to its art.

It may be considered as a synopsis of all his earlier writings on the Nature of Disease, more clearly and understandably presented, and as an amplification and extension of his great Cardiff address (1937) on "Life, Disease and Death." The first function is carried out in the Introduction and the six chapters that make up the body of the volume, and should appeal particularly to open-minded clinicians; while the second function is expressed in the relatively brief Prologue and Epilogue, and will appeal strongly to those of a philosophic turn of mind.

A few quotations will suggest the scope and flavor of this remarkable book:

"Physics appears to form the basis of all the sciences, and makes the Universe a physical Universe."

"The host's first line of defense lies in the protein of the sap or blood, and all invaders act fundamentally in the same way."

"Man is a product of the condensation of activity . . . the celestial bodies and the protein particles are alike . . . man is the last product of the condensation of energy and has a hand in shaping his destiny."

"Revolutions are the result of the failure of those in authority to harmonize the exhibitions of the functions of activity in our society. The main cause is specialization, which is only an extension of ignorance."

"Wars are the result of money and wealth parting company, and this parting happens when the former is manufactured and the latter is not produced."

"When the activity embracing mankind becomes coterminous with the cosmic activity, full power to prevent and combat disease will be vested in each individual."

There is a highly unusual bibliography and an adequate index.

Those who are ossified at the top will declare this book preposterous; those who have no interests beyond the small affairs of every day will consider it "heavy" and incomprehensible; but the ones who are sufficiently experienced in *thinking* to do so without creaking of the mechanism will find it an immensely exciting and broadening experience.

THE LARYNX

Jackson and Jackson

DISEASES AND INJURIES OF THE LARYNX: A Textbook for Students and Practitioners. *By* CHEVALIER JACKSON, M.D., Sc.D., LL.D., F.A.C.S., *Hon. Prof. of Broncho-esophagology, Temple Univ., Philadelphia,* and CHEVALIER L. JACKSON, A.B., M.D., M.Sc., F.A.C.S., *Prof. of Broncho-esophagology, Temple Univ., with over 200 Illustrations, Including 11 Plates in Color. New York: The Macmillan Co., 1942. Price, $8.00.*

The distinguished authors of this volume are primarily and essentially *clinicians*, and the material in this book is *facts* (described and illustrated), rather than ideas or theories.

Beginning with anatomy and physiology, all that is now known about the larynx and its diseases and injuries is presented in a clear, orderly, terse, and practical manner, with full details as to the diagnosis and the medical or surgical management of all the disorders that the clinician is apt to see.

The illustrations are original and unique, having been made for this work by or under the direction of the senior author, who is an eminent artist, not only in the medical field, but also in the general conception of that word. The full-color plates of laryngoscopic appearances constitute an atlas of the subject; and diagrammatic drawings or special photographs clarify the text of each of the 30 chapters.

This book is a graduate course in laryngology, and will be especialy valuable to the many general clinicians who will, during the next few years, be compelled to do a good deal of work in this special field which they have not done for some years, if ever.

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THE FOREIGN SUBSTANCE RACKET

Levinson

FOOD, TEETH, AND LARCENY. *By* CHARLES A. LEVINSON, D.M.D. *New York: Greenberg, Publisher, Inc. 1940. Price, $2.00.*

Hundreds of people make their living by a form of larceny that consists of faking foreign substances in the food of public eating places, and collecting damages (often with the help of venal physicians and dentists) for alleged physical or psychic injuries sustained, from the proprietors of such places, who dread adverse publicity.

The author of this volume has studied this racket carefully, and gives details, with many interesting case reports; also suggestions as to how physicians can assist in breaking it up, and can keep themselves from being involved in it. It is good and instructive reading for odd half-hours.

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Other Books Received

With Brief Descriptions

WAR GASES, Their Identification and Decontamination. *By* MORRIS B. JACOBS, Ph.D., *Formerly Chemist, Dept. of Health, City of New York, etc. New York: Interscience Publishers, Inc., 1942. Price, $3.00.*

A rather technical book for gas chemists and gas-identification, decontamination, and health officers.

PAGINAS CLINICAS. *By* DR. LAZARO MENDOZA, *Professor of Symptomatology and Diagnosis, Univ. of El Salvador. San Salvador, C. A.: Imprenta Nacional. 1942.*

A collection of interesting clinical notes, for those who read Spanish.

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[1]Reimann, H. A.: Treatment in General Medicine, 1941 Progress Volume. Phila., F. A. Davis Co., 1941.

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